GENDER DISCRIMINATION IN THE TURKISH LABOUR MARKET

by

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ABSTRACT

In this thesis we investigate the presence and extent of wage discrimination and occupational gender segregation in the Turkish labour market. Cross-section tests of wage discrimination between men and women for occupations, in the following branches of economic activity - manufacturing, mining, and quarrying, electricity, gas and water sectors for the year of 1994 is estimated by econometric methods. Horizontal occupational segregation by gender in the Turkish labour market for the period of 1975-1990, and vertical occupational gender segregation within the Turkish Higher Education Institutes between 1988/89 to 1997/98, is explored by using an alternative index method, which was developed by Karmel and Maclachlan.

The results of discrimination analysis show that there is substantial wage discrimination and occupational segregation between male and female workers in the Turkish labour market. Occupational gender segregation is an important explanation accounting for the wage differences. The findings of this study suggest that labour market discrimination in Turkey emerges from the constrained labour market choices, due to the institutional barriers to female education, training and employment, rather than the free choice of women in the market, as proposed by the human capital theory. Cultural and traditional stereotypes among employers, and in the society as a whole, about the suitable gender characteristics for certain jobs play a very important role in the persistence of discrimination in the Turkish labour market.

Therefore, all these findings indicate that the intervention to eliminate discrimination in Turkey is inevitable. In this study, educational policies are suggested as a very important policy to eliminate discrimination in the Turkish case. Because it will not only increase women's more equal access to male-dominated occupations, but also help to reduce the discrimination against women, by changing the discriminatory social norms in the society.

To my little daughter ALKIM,

For all her love

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ABBREVIATIONS

BAG-KUR	The Independent Retirement Funds
CEDAW	The Convention on the Elimination of Discrimination Against Women
DGSPW	The Directorate General on the Status and Problems of Women
EU	European Union
FRI	The Family Research Institute
GDP	Gross Domestic Product
HEC	The Higher Education Council
HES	The Higher Education Statistics
ILO	International Labour Organisation
ISCO	International Standard Classification of Occupation
ISIC	International Standard Industrial Classification
LFPR	Labour Force Participation Rate
OECD	Organisation for Economic Cooperation and Development
OSYM	The Student Selection and Placement Centre
SIS	The State Institute of Statistics

CHAPTER 1

INTRODUCTION

Studies of gender discrimination in the labour market have been very popular during the last three decades. Most of the empirical research on labour market discrimination has been confined to developed countries such as the UK, the USA, Austria, etc. This is due to lack of availability of micro data sets in the developing countries. However, a relatively small number of empirical studies on gender discrimination in the developing countries have been undertaken recently using the human capital framework. These include the studies of Birdsall and Sabot (1991) and Duraisamy and Duraisamy (1996). Gender discrimination in Turkey has been traditionally studied by sociologists and little attention has been paid by economists to analyzing discrimination within the labour market. Therefore it is of interest to study the scope of labour market discrimination against women in a developing country such as Turkey.

Gender discrimination in the labour market is the main focus of the present study, although the sources of female workers' disadvantage in pre-labour market activities such as the household, educational institutions and social traditions are briefly discussed, as they exercise a powerful influence on the labour market behaviour of women. Labour market discrimination is defined as occurring when one group of workers with abilities, education, training, and experience equal to another group of

workers experience inferior treatment in hiring, occupational access, promotion or wage rates on the basis of some personal characteristic, such as gender, race or religion, which is unrelated to productivity (King, 1990, p. 111). Neoclassical theory assumes that rational profit-maximizing entrepreneurs will select and pay employees purely with reference to their productivity. If we find that a group, identified by a characteristics such as gender, race, religion etc, is receiving wages discounted relative to its productivity or is restricted in its access to employment this indicates that some force is intervening in economic activity. The hypothesis here is that discriminatory social attitudes have the responsibility (Addison and Siebert, 1979). In the light of this definition, the purpose of the present study is to analyse and estimate of wage discrimination and occupational gender segregation in the Turkish labour market. Major aspects of the study are:

1) to analyse the existing theoretical and empirical literature of gender discrimination and evaluate their relevance in a developing country such as Turkey where traditional cultural beliefs and norms are still prevalent;
2) to assess the situation of women in the Turkish labour market from various aspects indicating the observed differences in the labour market characteristics of the genders;
3) to investigate wage discrimination in different occupations in the following branches of economic activity – mining, quarrying, electricity and manufacturing, gas and water sectors in general; and examine the extent of wage discrimination in different occupations within manufacturing sector in particular;
4) to analyse the pattern of horizontal occupational gender segregation in the Turkish labour market in general;

5) to explore the extent of vertical occupational segregation by gender within the Turkish Higher Education Institutions in particular;

6) Finally, in the light of above findings, specify policy implications to eliminate the wage differences and occupational segregation between the genders in the labour market.

Two different types of model have been employed in our empirical investigation: wage discrimination against women has been estimated in an econometric context (see Chapter 4), and horizontal and vertical occupational segregation by gender have been examined by using an alternative index method, which was developed by Karmel and Maclachlan (see Chapters 5 and 6).

The data set used to carry out empirical analyses in this study are obtained from four different sources. Firstly, *Employment and Wage Structure Survey* data for the year of 1994 conducted by *the State Institute of Statistics (SIS)* have been used for the empirical study, which tests wage discrimination for thirty-eight different occupations in mining, quarrying, gas and water, and manufacturing sectors. Secondly, the statistical analysis of wage differences between men and women for twenty different sub-industries within manufacturing sector for the period of 1982-1994 has been examined using the data, which have been derived from two issues of *the Year Book of Labour Statistics* published by *International Labour Organization (ILO)*. In addition, the data on wages in the manufacturing sector were available only between 1982-1984 and 1988-1994, therefore the figures for the years in between have been interpolated by utilizing Newton's forward interpolation formula for each of twenty sub-sectors between the years 1985-1987.

Thirdly for testing horizontal occupational segregation by gender in the Turkish labour market, we have employed the *Population Census* data from the *SIS*, over the period 1975-1990. Fourthly, vertical occupational gender segregation within the Turkish Higher Education Institutions has been examined by using the *Higher Education Statistics* for the period of 1988/89 to 1997/98 academic years.

This study is intended to increase our understanding of the existing sources of, and mechanisms for, discrimination against women in the Turkish labour market. This will enable the proposal of alternative policy recommendations for reducing inequalities between men and women in the labour market. It would then depend upon the political will of those in power whether such policies could be implemented. In view of the existence of a Ministry of State for Women currently in Turkey there are grounds for optimism.

CHAPTER 2

GENDER DISCRIMINATION IN THE LABOUR MARKET : A REVIEW OF THE THEORETICAL AND EMPIRICAL LITERATURE

2.1 Introduction

It is well-known fact that women generally earn less than men. There is a significant pay difference between men and women workers all over the world. Women are minority groups in employment and concentrated in certain generally low-paying occupations and industries. There is a frequent segregation of work by gender, and a scarcity of promotion and job opportunities for women.

Empirical studies of labour market discrimination in both developed and developing countries show that there are persistent wage discrepancies between men and women workers (Yaron, 1989; Birdsall and Sabot, 1991; Wright and Ermish, 1991; Duraisamy and Duraisamy, 1996). This finding conflicts with the prediction of the perfectly-competitive neoclassical model of the labour market.

In this chapter, we firstly start from the explanation of what we mean by labour market discrimination and this will be followed by the presentation and evaluation of the orthodox theory of discrimination. In section 2.3, the neoclassical theory of discrimination with complete information is first presented. The competitive and non-

competitive models are dealt with. This will include 'the human capital hypothesis', 'the overcrowding hypothesis', and Becker's 'taste for discrimination hypothesis'. Next competitive neoclassical models with imperfect information, which lead to 'statistical discrimination', will be examined. The institutional approaches are then reviewed in section 2.4 as this is an alternative to the neoclassical theory. The methods of estimating wage discrimination with both indirect and direct tests of discrimination are evaluated in sections 2.5 and 2.6. Finally, section 2.7 presents the available statistical evidence on wage and employment discrimination in developing and developed countries' labour markets.

2.2 Definitions of Discrimination

Labour market discrimination has been described as occurring when one group of workers with abilities, education, training, and experience equal to another group of workers are provided inferior treatment in hiring, occupational access, promotion or wage rates on the basis of some personal characteristic, such as gender, race or religion, which is unrelated to productivity (King, 1990, p.111).

In analyzing discrimination it is very important to understand what is meant by discrimination and to recognize that it can be of different types and take different forms. For instance, women's inferior position in the labour market can involve wage discrimination (where equally productive men and women are employed in the same job but being paid different wages); employment discrimination (where women face lower opportunities in being hired and /or promoted although they have the same qualifications and experience as men). There are three essential forms of employment discrimination. Hiring discrimination takes places when males are preferred in the

recruitment process even though females have equivalent employment-related characteristics. Promotion discrimination arises when women with equivalent achievement to man are treated differently in promotion decisions and in access to further training. Finally, firing discrimination happens when women are selected in termination decisions because of their gender rather than their relative productivity.

In addition, it is very important to distinguish between pre-entry and post-entry discrimination. The former arises before the worker has entered the labour force and may be within the family enviroment and/or in the educational decision. The latter is practised within the workplace. Theories of wage and employment discrimination are often limited by ignoring pre-labour market discrimination.

This thesis is specifically concerned with the labour market and wage and employment discrimination. Pre-labour market discrimination is beyond the scope of our study, although it is recognized that this may well be an important source of female workers' disadvantage. Most of the standard theories of labour market discrimination primarily address post-entry discrimination and this is also generally true of the empirical literature.

2.3 The Theories of Labour Market Discrimination

As explained earlier, labour market discrimination arises when individuals identified by group characteristics, such as gender, race, etc., which are not related to the productivity characteristics of the individual worker, face inequality in access to jobs and pay. The predominant neoclassical theory predicts that in the competitive labour

market, wages are equal to the marginal product of labour and that two equally productive workers will be paid the same wage, at least in the long run.

In a competitive world with profit-seeking entrepreneurs wage discrimination cannot remain in the long run. If a minority group of workers (women) have their wage discounted relative to their true productivities this means that the unit wage costs of these workers are less than that of the preferred group of workers (men). Consequently profit-maximizing entrepreneurs will switch their attention to women and the free-market process will remove the discrimination. Conversely, if they continue to practice their discriminatory preferences and prejudices in a free market economy, it will be very costly to them. Consequently they will be punished, in the form of losing profits and sales and subsequently these employers should be driven out of business by non-discriminatory competitors.

Williams (1987), Mason (1992) and Darity (1995) point out that the neoclassical economic theory establishes, on the assumption of perfect competition, that no single individual agent in a market economy has the capacity to affect price via his or her own decisions. This means that all market participants are price takers. In the long-run the full effects of entry to profit maximizing industry works efficiently to ensure that only 'normal' profit is earned. At which point there is no further motivation for entry.

However, Darity (1995) claims that 'Austrian economics' assumes an 'absolute process' view of competition, rather than a 'state of affairs' view of the neoclassical competition. "Postulating the existence of a latent reservoir of alert entrepreneurs

ready to seize any profit opportunities that might arise, Austrian competition deems it largely irrelevant whether individual participants in the market are price takers or not. The key is the capability of human beings, motivated by pecuniary desires, to pursue all conceivable opportunities to reap economic gain" (Darity, 1995, p. 586. Also see for extensive information Darity, 1989).

In sum, according to the neoclassical or marginalist presumption, discrimination is always eliminated in the competitive, privately organized and profit maximizing world. This argument relies on competitive markets and ruthless, profit-seeking, 'Austrian' entrepreneurs as well. Darity (1989) argues that "it is really the Austrian process view of competition, that lies at the heart of the demise of discrimination" (p. 339). This follows from the free-market condition, i.e. laissez faire, and belief in entrepreneurial creavity and strict individualism. Therefore if women are paid less than men on average in the same job we must conclude that women are less productive than men, provided there exists a free market economy with profit-seeking 'Austrian' entrepreneurs. This can be the only outcome under the neoclassical assumptions. Nevertheless, Darity (1995) argues that "it is the neoclassical theory of discrimination that is subject to the criticism that, if members of both groups on average have the same efficiency then employer competition might lead to segregated workforces but should not lead to pay or employment differentials. Neoclassicism theoretically does not yield persistent discrimination or economic inequality between races / sexes as a stable outcome" (p. xxiii).

Freeman (1973) argues that if there are continuing wage disparities between majority (men) and minority (women) group of workers, this must be due to noncompetitive,

non-labour market discrimination which leads to productivity differences between men and women (Freeman, 1973, pp. 284-85). He explains that this noncompetitive, non-labour market discrimination involves three types of discriminatory activities as follows: 1. Governmental discrimination in the provision of education and schooling, 2. Unequal access to government employment, 3. Social pressures and extra market cost incurred by non-discriminatory market participants because of this non-discriminatory behaviour. These three main factors inhibit the disadvantaged group gaining an endowment of human capital equivalent to the advantaged group of workers.

Darity (1995) argues that

"Freeman is absolutely correct in his claim that it is virtually impossible to tease a theory of persistent economic discrimination out of the world envisioned in neoclassical economics under free-market conditions. And if labour market discrimination is not a vanishing phenomenon there is a major unresolved theoretical anomaly for conventional economics" (p. xxxiii).

Therefore we can explain enduring discrepancies in wages of men and women under the several sub-headings as follows.

2.3.1 The Human Capital Approach

It is argued that the explanation for minority workers' low relative pay and occupational status lies in their relative deficiency in human capital. This theory, which relates an individual's investment in education and training with his or her lifetime earnings was developed by Mincer (1958) and Becker (1962).

Human capital can be attained in educational institutions, via on-job-training or from the experience of working in a job. It is described as 'investment in himself'. Bergmann (1986) criticizes human capital theorists who claim that on-job-training results from a decision by a worker to 'invest in himself'. This neglects the fact that it is employers, and sometimes male-dominated unions, which decide who is to get such training. If women have less on-job-training than men, this may be the consequence of employment discrimination.

The important point of the human capital approach is that men and women may not be perfectly substitutable for one another. Women may accumulate less human capital through work experience, if their child-bearing and rearing interrupts their labour force participation. Their human capital during a period outside the labour market will be depreciated, therefore productivity differentials between men and women will arise. When women workers re-enter the labour market, they will earn less than men who had continuous market experience.

In addition, models that are based on human capital characteristics argue that women engage in less off-the-job training because they expect to work less, and that they choose occupations for which interruptions to employment are not costly, as skills do not depreciate markedly and earnings do not change markedly over a lifetime.

Furthermore, Polacheck (1981) argues that segregation results because women, whose employment is intermittent, maximize lifetime earnings by choosing occupations with low depreciation during time spent out of work. Zellner (1975) considers that many women optimize lifetime earnings by choosing occupations with high starting wages

but low wage appreciation, while men optimize in occupations with high appreciation. Both theses explain that men and women have a pecuniary reason to choose occupations traditional for their gender, which reflects their differential child-bearing and rearing roles.

Blau and Jusenius (1976) point out that

"the human capital model is subject to criticism on several grounds. It, too, depends upon an elusive factor termed tastes to explain why women 'choose' to enter a given occupation or to have a given preference for nonmarket work, without providing an underlying theory which would explain that choice. More, it is not clear why only women should have such tastes nor is it clear why a large proportion of women should show the same set of tastes -as demonstrated by their occupational distribution" (p.188).

According to this approach differences in human capital between men and women are generated from outside the labour market and have their impact via the supply function. This can be occur because of biological or social factors- particularly the socialization process imposing child-care responsibilities on women. Consequently they may have higher turnover and absenteeism, and less job experience than men. In addition they might have less geographical flexibility in supply as home location is dominated by male employment considerations.

Turkish women have access to childcare support within the extended family in a way which is not usual in Northern Europe and North America. This means that the human capital approach may have lower significance, as there is less reason for the

Turkish women to interrupt work when they become mothers. The support provided by the extended family is confirmed in Ecevit's study, which demonstrated that 79 percent of childcare activities for Turkish women in manufacturing sector was provided by grandmothers or other female relatives (Ecevit, 1986, p. 314). In addition, there is a disincentive to withdraw from secure employment because available jobs are already scarce and the unemployment rate is very high (Ecevit, 1986; World Bank, 1995).

2.3.2 Statistical Discrimination

A further explanation is that labour market discrimination may emerge from information costs in hiring labour: for instance trouble in acquiring detailed information for each applicant. If employers believe that the average productivity of two easily identifiable groups vary, then they may use gender, race etc. as a cheap screening device. This is an alternative neoclassical theory of 'statistical discrimination', which maintains the assumption of perfectly competitive labour markets, was developed by Phelps (1972).

In a world of imperfect information employers face risks in hiring workers, and race, and gender become inexpensive screening devices. If employers believe that there is a systematic differential between the gender or races, in their reliabity, aptitude and job stability, this is sufficient to create a permanent differential in wages between women (black) and men (white). "As it is an expensive and uncertain business to test each individual applicant's ability and motivation, employers simply assume them to have the average characteristics of the demographic category into which they fall" (King, 1990, p.119). If it is believed that most blacks are less efficient or unreliable,

and that most women leave their jobs to get married or for child-bearing activities, then all blacks and all women are put in the same category by employers and they will be expected to be employed only at lower wage rates (Arrow, 1973).

In the case of statistical discrimination theory, in contrast with Becker's theory of 'taste for discrimination', which will be explained in the next Section, employers do not discriminate against women or blacks because of distaste or prejudice. Instead they discriminate against them because they believe that hiring women or blacks rather than men or whites is not profitable for them on average.

Darity (1982) challenges this concept of statistical discrimination as applied to racial differentials. Applying his analysis to gender we must query the assumption that women and men possess the same average productivity but women have a higher variance in abilities. If employers are risk averse under such circumstances, their hiring decisions could favor men to the disadvantage of women- leading to a difference in employment opportunities and pay. 'Statistical' discrimination would thus develops even if women and men on average have the same average capabilities. As Darity explains "there are several problems with this version of the statistical theory of discrimination. Why should one believe that blacks' (women) abilities are more dispersed around a common mean than are white (men's) abilities" (Darity, 1982, p.76). Moreover, "it is no longer clear in what sense the assumption that black and white (women and men) workers are identical in ability is still being retained if one race (gender) is known to have more dispersed distribution of abilities than the others. Also, it must be demonstrated that it costs employers more to seek to determine where a particular black (women) lies along the black (women) distribution

of abilities, rather than engage in 'statistical discrimination' using race (gender) as a proxy for capacity to perform on the job" (Darity, 1982, p.76).

In the statistical theory of discrimination, it is argued that on average female workers are not perfect substitutes for male workers, thus the reality of the situation implies that wage discrepancies between men and women arises from a non-discriminatory labour market. This argument, that differences in average productivity characteristics leads to a preference for males, is in effect a sub-class of human capital theory, and therefore Bergmann calls it 'human capital theory in drag'.

Discrimination against women in Turkey may partly reflect the model of statistical theory of discrimination. In the Turkish labour market, information about real productivity is difficult to obtain, so when the employers are not able to obtain information and statistics about their applicants' productivity, they trust prevailing assumptions and beliefs. Ecevit (1986; 1991) shows these powerful prejudices against women in her study. In contrast to the reality of women's situation in the labour market which is explained in section 2.3.1, it is believed that because of their domestic responsibilities women are not as reliable as male workers, and that they withdraw from their work when they become a mother or when they get married. Thus it is assumed that the turnover rate is higher than that of men and attachment to work is lower. Also in Turkey it is argued that "a female household member is not principally responsible for the upkeep of the household; rather she works to keep the household supplied with non-essentials" (Ecevit, 1991, p.60). So, she can easily leave her job when she is needed by her family for domestic reasons. These kinds of negative stereotypes penalize those women who are as committed to the labour force

as men. This is consistent with our findings in chapter 4 for wage discrimination in Turkish manufacturing industry.

2.3.3 Becker's Theory of 'Taste for discrimination'

Gary Becker (1957) focuses on 'taste for discrimination' i.e. non-pecuniary motivation as the source of discrimination by entrepreneurs, male employees and consumers. Becker applies Adam Smith's approach of 'compensating variation' to develop his treatment of discrimination.

Becker (1957) argues that "if an individual has a 'taste for discrimination', he must act as if he were willing to pay something, either directly or in the form of a reduced income, to be associated with some persons instead of others" (p.6). The taste for discrimination is due to individuals' preferences and prejudices. Employers are prepared to sacrifice profit to avoid female workers, male employees are prepared to sacrifice wages to avoid female workers, and consumer prepared to pay higher prices to avoid female provision because of this distaste.

In this model, it is assumed that there is perfect competition, which means that there is free entry and exit for employers, and the two groups, women (W) and men (M) are assumed to be equally productive. Becker introduces a discrimination co-efficient (DC), which is the discriminatory reward the employer feels he must incur given his preferences for male workers. If the wage cost to the employer of a male worker is w, the effective wage cost of employing a female worker is w(1+a), and Becker describes the effective wage cost of employing a female worker as a 'net wage rate'. Similarly, if a male employee gets a money wage of w when working together with a female,

then the male employee acts as if his net hourly pay is w(1-b). Finally, if a male or a female buys a good produced by a female for a price p, then the male acts as if the net cost is p(1+c). The parameters a, b, and c are the discrimination coefficients (DC). When the parameters are greater than zero, the DC is identified with 'disutility' and it measures the 'psychic costs' which associated with the disliked circumstance (Darity, 1995, p.430).

Becker, using this approach, explains why wage disparities occur between these two groups. It is considered that there are two ascriptively different but equivalent productivity groups on average, when employers have a preference for a member of one group over the other. Because of ascriptive differences, the employer is willing to pay a reward for workers who are preferred by him/her. This argument depends upon a high degree of homogeneity of gender preferences amongst all employers, and amongst even the potential employers. The male group of workers likewise must have a uniform taste for discrimination. However, in a competitive world with free entry and exist, 'Austrian' entrepreneurs should eliminate such discrimination i.e. by employing cheaper women workers with equivalent productivity, ensuring lower unit wage cost than the discriminatory employers.

When female workers (who are as productive as male workers) are hired, their employers will benefit from higher profits than their rivals because they can pay women a lower wage. This would affect other employers' decisions forcing them to imitate the non-discriminatory employer, therefore the demand for women would increase and eventually wage discrimination would be destroyed. In the case of male employee prejudice, with male workers working higher wages as a reward to work

side by side with female workers, if the discriminating and discriminated groups of workers are perfect substitutes, the employers may react by hiring either all women or all men in the workplace, and competition will ensure males and females will be paid the same wages. Therefore in this case, in the long run, segregation takes place instead of wage differentials (Becker, 1957; Darity, 1995).

When we consider consumer discrimination, Becker (1957) assumes that market forces will penalize consumer discrimination in the long run as discriminating consumers will pay higher prices than non-discriminating consumers, therefore a tendency for declining taste for discrimination is produced. However, as Darity (1995) argues, if discriminating consumers are pleased to pay higher prices for the privilege of purchasing male workers-provided services and goods, there is no apparent mechanism to drive these discriminating consumers out of the market (p. xxvi).

The essential problem with Becker's theory is that it cannot explain persistent differences in earnings between equally productive women and men in the long run. In his model gender differentials are necessarily a short-run or disequlibrium phenomenon, whereas there are persistent wage discrepancies between men and women workers in many countries. Therefore the actual long-term dynamics of real world labour markets cannot be reconciled with Becker's pure labour market discrimination explanation. In his model male employers and employees are willing to give up money income for the added satisfaction of avoiding women, but this is not consistent with neoclassical theory because the incentive of monetary reward will

induce non-discriminatory entrants to take advantage of the lower costs involved in hiring women (Darity, 1995, p.432).

Nevertheless, as Birdsall and Sabot (1991) state "a variant of this strand of the theory of discrimination may be of particular relevance in low income societies where social traditions still exercise a powerful influence on economic behaviour" (p.2). Beliefs about differences between the genders that are grounded in traditional cultural values contribute to the persistence of gender discrimination. These beliefs take as axiomatic that women's primary sphere is the home and that of men is the workplace, and assume innate gender differentials in personality and physical characteristics that are supposed to suit women and men. There are patriarchal relations and gender based cultural roles in family and society in Turkey. Women's status is determined generally by tradition, custom and religion and employers think women's main role is as homemaker, and men are the breadwinners, so this belief in the appropriate roles for women and men does affect the wages, promotion and hiring of women. Women are paid less than men because it is thought that women are dependent on men and the main breadwinners are men, so they must be paid more (Ecevit, 1991; 1995; Gonen and Hablemitoglu, 1989).

In the Turkish case, male employers and employees do have some prejudices and this social custom reinforces different types of roles among men and women. The male role is expected to be main source of their family income i.e., 'head of the household' and the female role is proposed to be mother and housewife and their primary assignment is domestic jobs and only secondly as workers. Ecevit's study on the Turkish manufacturing sector shows that women's subordinate position in the labour

market comes from the discriminatory social attitudes towards their work. For example, it is assumed that all women in society lived with a man, either their husband or their father. The women's wage is seen as a supplement to the men's wage and therefore their lower pay and lower position in the labour market is not seen as problematic by the society (Ecevit, 1986, p. 252).

2.3.4 The Monopsony Model

Fourthly, wage differences can arise from the special conditions of a monopsonist with a divided labour force and where the two groups have different alternative job opportunities. This model of monopsony was first presented by Robinson (1934) and developed by Madden (1973).

In the monopsony model, there is only one employer or alternatively collusion between employers who act as a single buyer and face an upward sloping labour supply curve. The level of market demand is affected by the employer's buying decisions. As we have explained above in the human capital model, in perfect competition, the worker's wage equals his or her marginal productivity and the wage differences between the male and female workers consequently depend on the differentials in productivities produced by factors such as years of schooling, experience etc. In the monopsony model, however, workers are paid less than their marginal productivities and the extent of disparity between wages and marginal productivities is based on the wage elasticity of the labour supply of each group to the firm (Blau and Jusenius, 1976).

For monopsonistic discrimination to arise two condition must be met:

1. the labour supply must be in separate and identifiable groups

2. these labour groups must have different wage elasticities of labour supply. If the supply of women tends to be more inelastic than that of men a profit maximizing monopsonist pays male workers higher wages than female workers. Madden (1973) argues that this discriminatory monopsony power emerges from the monopsonist employer supremacy and the dominant male power in society. The lower wage elasticity of female labour supply arises from women's lower labour mobility and the lower demand for women in alternative occupations in comparison to men. Firstly, household location is generally dominated by male needs, therefore the women's place of residence depend on the husband's place of residence. Consequently women are relatively immobile in the labour market. Secondly the employers and customers may categorize workers by gender and prefer them in different occupations. Social forms and tradition determine this occupational distribution and disadvantaged groups such as women or blacks may be confined to relatively narrow range of jobs compared with the dominant whites or males.

Blau and Jusenius (1976) have challenged this supply elasticity argument. They argue that women's supply curve may be more elastic than men's, as women may be a more mobile than men because they already have available a job outside market as a housewife. Consequently their relative immobility within the market may be compensated by their ability to easily transfer to outside the labour market.

This claim is consistent with the finding of Killingsworth in 1983 for the empirical study of labour supply in the United States. It is shown that the wage elasticity of labour supply for women is greater than men, which demonstrates that the economy -

wide labour market may not correspond to monopsonistic discrimination. It is suggested that the Robinson and Madden monopsony model is not generally applicable to the a developed economy such as the United States (see Ashenfelter and Oaxaca, 1991). Furthermore, Ashenfelter and Oaxaca (1991) argue that "there is really no direct evidence provided on labour supply elasticities and on extent of monopsony power in the developing economy labour markets" (p. 37) such as Brazil, India, and Nicaragua. In the contemporary world of single parents this alleged mobility to a housewife role outside the labour market is of diminished relevance. The female wage elasticity of labour supply could be less in different occupations and industries because of the inhibited occupational choices for women.

In the Turkish case, there are some restrictions which stem from the labour market, such as the employers' traditional attitudes and beliefs about women workers, and some labour and civil legislations which constrain women's labour supply to different occupations. For instance, according to the civil code: the husband is the head of the household, and determines domicile and his views prevail on family matters in case of disagrement (Articles 151-158). Because of these limitations women may be less mobile than men and also, the employers' discriminatory attitudes and beliefs towards women can maintain gender-segregated labour market, which restrict women to certain occupations and therefore influences the elasticity of female labour supply.

2. 3. 5 The Overcrowding Approach

It is argued that gender discrimination in the labour market may arise from a general case of non-competitive markets, with women restricted to a narrow range of jobs,

whereas men have unlimited access. This is the 'crowding' effect mentioned long ago by Fawcett and Edgeworth.

Millicent Fawcett was the first to put on paper the 'crowding' hypothesis in 1918. She argued that employers' prejudices, social custom and trade unions denied certain occupations to women, thus leading to the overcrowding of women in other, basically unskilled and low status occupations, which forced female wages downwards (Tzannatos, 1989). In 1922, Edgeworth formalized this notion in terms of neoclassical demand and supply analysis and, the crowding hypothesis is generally credited to him. Also he mentioned that "the pressure of male trade unions appears to be largely responsible for that crowding of women into a comparatively few occupations, which is universally recognized as a main factor in the depression of their wages" (Edgeworth, 1922 p. 432). This model was subsequently applied by Bergmann (1971) to the case of racial discrimination in the USA. Although she revives the over-crowding hypothesis in race discrimination problems, she also give some reference to the problem of gender discrimination. It is assumed in her model, which also applicable to gender, that there is a one commodity economy, with production specified by a constant elasticity of substitution production function utilizing three factors which are capital, black (female) labour and white (male) labour. If there is no discrimination in employment this means that all jobs are accessible to both blacks and whites (genders), and labour will be distributed equally so that marginal products are equal in all occupations. Also both black (female) and white (male) workers will receive wages equal to their marginal productivities. On the other hand, in the case of discrimination in employment, black (female) workers are crowded into a relatively small number of occupations and their marginal product

will be lower than in white (male) occupations because of this abundance of supply relative to the demand. In these positions, black (female) workers receive lower wages as an employment-constrained group, and white (male) workers as a non-constrained group receive higher wages than if there were not restraints in mobility between the white (male) and black (female) sectors. In other words, in this case both races (genders) are paid wages equal to their marginal products, but because of the forcing of women into a small number of occupations, and the consequent low capital-labour ratio in these occupations blacks' (womens') marginal productivity will be lower than whites' (mens') (Bergmann, 1971; 1974).

The main distinctive feature of the 'crowding theory' is that it abandons the concept of perfectly competitive labour markets and presents the idea of discrimination by labour market segregation. According to this theory men get more pay than women, even when they have very similar human capital, even when they have similar jobs, because they are not competing in the same market. Many jobs are allocated for one gender or the other, so men and women are selling themselves and their human capital in segregated markets, a separate market for each gender. Men sell their labour in the market where jobs labeled for men are filled, and women are not allowed to compete with them in that market (Bergmann, 1989, p. 49).

The Bergmann formulation consists of two chief assumptions: firstly workers are identical with respect to potential productivity, and secondly demand side conditions are responsible for the overcrowding.

Blau and Jusenius (1976) remark that

"through her inclusion of employer tastes, Bergmann unites Becker's theory of discrimination with Fawcett's and Edgeworth's. ... This reliance on employer tastes as the casual factor of occupational segregation does not appear to be sufficient. It is not clear why so many employers would have such tastes against women in certain occupations, nor is it clear why employers' aversion should be so 'strong' that they are not compensated for their disutility by the prevailing male-female pay differential" (Blau and Jusenius, 1976, pp.184-185).

The Bergmann model fails to clarify the significant degree of occupational segregation between male and female and it cannot present accurate analysis of the causes and mechanisms of labour market segregation within each sector (OECD, 1985, p.40).

However, Polachek (1981) claims that the human capital theory presents a good explanation for occupational gender segregation, or crowding of women, where the differences in wages between men and women is due to women's deliberate choice of certain jobs which are easy to leave and reenter. Due to domestic reasons such as childbearing responsibilities and housework activities, women's employment is intermittent, therefore a woman has an incentive to choose lower-paid female occupations rather than male occupations where on-job-experience and continuous participation is vital.

England (1982), using regression analysis, shows that the propositions deduced from Polacheck's thesis are in conflict with her empirical evidence and she claims that human capital theory cannot explain the occupational gender segregation. England (1982) finds no evidence that it is rational for women who plan for intermittent employment to choose traditional female occupations in the US. In addition, she shows that women would receive higher earnings if they were employed in predominantly male occupations. Also according to Ecevit's (1986) study on Turkish women in manufacturing industry, Turkish women who work because of economic necessity, do not leave their job due to domestic work and childcare (p.351). Therefore this argument of Polachek that women choose deliberately 'women's jobs' and are crowded in particular lower paid occupations from choice is challengable.

It is argued by Bergmann and Darity (1981) that the essential idea of exclusion of women from a range of occupations is the economic self-interest of men, which contrasts with Becker's model where male employees may have a non-pecuniary taste for excluding women. This phenomenon is referred to by Darity and Bergmann as 'protecting your turf' (1981: 49).

In addition they suggest that, if even a small number of men workers are not happy about women moving into non-traditional job, this can create distress in the workplace. If the trouble-making employees are long term and experienced workers, the employer may face serious loss of productivity in the workplace if he insists on recruiting women workers. This idea of cohesive same-gender groups defending their 'turf', implies they act to maximize their territory (Bergmann and Darity, 1981, p. 49).

Male workers sometimes act to 'protect their turf' through the actions of trade unions, and access to training, etc.,. As it is pointed out by Hartmann (1976) the workers' organizations play a role in maintaining gender segregation in labour market. For example, the employers may be put off hiring females in male occupations by the power and pressure of male employees and male-dominated labour unions. Thefore the monopoly power of male workers in union usually support occupational discrimination against women.

It is doubtful, however, if the trade unions or male organisations do play a substantial role in creating gender segregation in the Turkish case. The unions' main plan has been to increase membership and represent as many workers as possible, so as to be recognized as a bargaining agent by employers. Thus, they have generally encouraged the membership of both genders, and they do not exclude women from the union. In addition women are not yet a real threat to men in the labour market because of the lower proportion of female labours in industry (Ecevit, 1991, p.72).

On the other hand, the government may discriminate against women to protect the dominant group (males) by constraining the occupations open to women workers. This may be by 'protective' legislation that does not permit women to work in jobs that require weight-lifting, night work, or overtime. The government may constrain the employers to employ females in only 'women's jobs' so that these are overcrowded. Also government may discriminate against women in the supply of education. Men may get better educational opportunities and job training than

women, so that women's position in labour market is affected by lowering their human capital and job skills.

In Turkey some labour legislation prohibits and restrains women from specific types of work. For example, according to Article 68, all types of underground and underwater work are forbidden to women. It is said that the crucial reason for this legislation is they are described as a 'men's jobs'. By the same token, women are banned from night work in industry with the exception of occupations in accordance with the regulation prepared by the Ministry of Labour (Article 69). Also, the Article 69 requires that women over 18 years of age may be employed for industrial work of a continuous nature that demands skillful handling and quickness but is not physically strenuous. The following activities are deemed to be 'industrial' and women are forbidden: printing operations, the construction and operation of gas and water works, the building, repairing, the transportation of passengers, goods and animals by land, air or water, and loading, unloading and handling of goods at railway stations, warehouses, harbours, quays and airport (Suzek, 1990 and see Chapter 3 for detail). Thus, this 'protective' legislation leads to occupational segregation between men and women labourers. It will be demonstrated in chapter 5, that this existing 'protective legislation' causes substantial occupational gender segregation especially in the industries of mining, transportation, utilities, etc.

Moreover, social pressure and traditions play an important role in allocating jobs between genders. Within the family work between women and men is usually complementary rather than competitive. This view is explained by Blau Weisskoff (1972) that " sexual segregation of the labour market and the resultant division of

female and male workers into two noncompeting groups preserves this basic characteristic that governs the relations of women and men in the family"(p. 163). According to custom and tradition, work is allocated on the basis of gender and it is thought some jobs are suitable for men and others for women. Thus women's employment opportunities are restrained by the conventional factors which operate the demand (employers' attitude towards to women) and the supply (restrictions on female) side of labour market.

In Turkey institutional factors are responsible for occupational segregation. Women are thought to be physically weaker than men so they must work in 'light jobs' which is labour intensive and lower paid, whereas men must be employed in 'heavy jobs' which are capital intensive and better paid. Also Ecevit (1986) argues that women are crowded in certain jobs because of the low cost of their labour, and the assumption that they are naturally appropriate to certain types of activities in work (p. 345). Also she claims that the ideology of appropriate work for females plays a significant role in maintaining the occupational gender segregation in Turkey.

These beliefs and assumptions affect female education and on-the-job training as well. Girls are socialized to choose occupations, which are appropriate for them. Also employers do not allow women workers to benefit from on-the-job training because they think it would be waste of money because women workers would leave their job when they marry or become mothers.

Consequently, the government's protective legislations, and social and traditional thoughts and assumptions, rather than the trade unions, play a significant role in crowding women into certain jobs in Turkish case.

2.4 An Institutional Approach

The institutional theories of segmented labour market analysis claim that the neoclassical approach, especially human capital theory, cannot explain gender discrimination and its persistence in the labour market. The neoclassical theory assumes that individual workers choose their jobs freely among the expanded job selections, according to their tastes and preferences. On the other hand, the institutional theory concentrates on how group of workers encounter objectively different labour market situations which systematically condition their tastes and restrain their wide range of actual choices for jobs (Rumberger and Carnoy, 1980; Craig, Garnsey and Rubery, 1985).

In this section, segmented labour market theories and feminist theories of gender discrimination will be discussed. The former stresses the structure of the labour market and the question of how women and men are fitted into separate divisions of the market. The latter emphasizes that the secondary position of women in the labour market and at home arises from the cultural, social and traditional factors.

2.4.1 The Segmented Labour Market Theories

Anker and Hein (1986) state that the segmented labour market theory's essential contribution is that it underlines "the existence of segmented labour markets and analyses the different ways in which different labour market segments operate,

thereby providing a refined alternative to the open competition between individuals assumed in neo-classical models" (p.10).

The best known theory of segmentation is the dual labour market theory which was presented by Doeringer and Piore in 1971. They classify two types of jobs: primary sector jobs that are characterised by good working conditions, high wages, good changes of promotion, security and opportunities for advancement, and secondary sector jobs with low wages, insecure employment conditions, high turnover, and little possibility for advancement (p. 165). According to this approach gender discrepancies in wages are ascribable to relatively limited access to the primary sector for women, smaller upward mobility by women from the secondary sector to the primary sector and relatively larger downward mobility by women from the primary sector to the secondary sector.

Generally a higher proportion of women are in secondary jobs than men, and the dual labour market analysis is useful in understanding the causes and consequences of this distinction. On the other hand, this approach does not explain the further gender segregation which definitely exists within each sector (Blau and Jusenius, 1976, p. 197).

Mason (1995) criticises the dual labour market theory for explaining the economics of discrimination like the orthodox theory. In the primary sector firms are able to discriminate in their market for factor inputs, as barriers to entry in their output markets give protection from competition. Within the secondary sector the intergroup differences in patterns of mobility and returns to labour power, such as years of

schooling, etc. have not been considered by the dual labour market theorist. Therefore, if this model cannot explain these phenomena, it is not, Mason argues, a significant alternative theory of discrimination to Becker's analysis of discrimination (Mason, 1995, p.546).

The theory of dual labour market analysis has been used broadly in US and UK to explain gender segregation in the labour market (Rumberger and Carnoy, 1980; Rubery, 1978; Hakim, 1981). It is argued that this theory was primarily developed to analyse the US labour market, and that it is not easy to apply to developing countries such as Turkey on account of their different labour market conditions. According to Reich, Gordon and Edwards (1973) segmentation emerges during the conversion from competitive to monopoly capitalism, so this argument is more relevant to oligopolistic corporations. Ecevit (1986) argues that, although some Turkish authors (Makine Muhendisleri Odasi, 1977; Sonmez, 1982) claim the monopolization process has accelerated in Turkey, she believes that this is nevertheless a recent phenomenon. In Turkish industry, small firms have generally dominated for a long time, hence, the dual labour market analysis is not relevant to Turkey (Ecevit, 1986, p.31).

2.4.2 Feminist Theories of Gender Discrimination

Some authors point out that the inferior position of women in the labour market and at home are interrelated, and that social and traditional norms are responsible. Economic and social variables interact with each other to create gender segregation (Power, 1975; Freeman, 1982; Anker and Hein, 1986). The most important argument in feminist theories to explain gender segregation is that "women's occupations tend to be extensions of domestic roles (e.g., teaching children, nursing, cleaning, serving),

and just as women's domestic work is devalued within most societies so are these occupations and skills. Some women's jobs may not in fact be less skilled than those done by higher paid males but tend to be downgraded because mainly women have developed skills" (Anker and Hein, 1986, p. 14).

Likewise, Power (1975) argues that when jobs are gender-typed, equal occupational opportunities are not given to women because of employers' statistical or overt discrimination, and because of restricted expectations on women's choices imposed by family life.

This approach is very useful to demonstrate women's position in the labour market as a part of a whole social system where women are subordinate. It is implied that "although their analyses are often polemical and lack the mathematical precision of the neo-classical and segmentation theories, they are nevertheless important since they force us to think about the deeper social roots of the sex segregation in the labour market" (Anker and Hein, 1986).

In addition, as mentioned above, in Turkey, cultural social and ideological factors play a very important role to explain women's subordinate position in the labour market. In addition, the long-standing stereotypes about women's and men's aspirations, expectations from work and attachment to work affect employers' decisions on women, so that they do not want to employ female workers in male occupations which causes the gender segregation. Therefore we can say that the feminist theories of discrimination may be useful in explaining gender discrimination in Turkey.

Furthermore, there is another argument in feminist theories suggested by Reskin and Roos (1990). This is that queueing theory, as a new approach, can explain the changing occupational composition and the role of group power in maintaining occupational segregation in the labour market. Thurow (1975) was the first to use the labour queue to characterize the labour market and assumed that blacks suffered from unemployment more than whites because they were ranked by employers below whites in the labour queue. However, Reskin and Roos (1990) systematize it to clarify the uneven distribution of groups of workers across occupations or in other words, occupational segregation.

The queuing approach characterizes labour markets as comprising labour queues that rank groups of workers in terms of their attractiveness to employers and job queues that order jobs in terms of their attractiveness to workers. The occupational composition results from a matching process, in which the best jobs go to the most preferred workers and less attractive jobs go to the less preferred workers. Therefore the less preferred, bottom-ranked workers end up in jobs that others do not want to take. By identifying the structural properties of queues, the conditions that influence the occupational composition can be defined as follows; "when (a) the relative distributions of elements –workers across labour queues, jobs across job queues- change, (b) employers rerank workers or workers rerank jobs, or (c) the intensity of workers' or employers' preferences for or against particular elements decline or grow" (Reskin and Roos, 1990, p.307).

The queuing perspective emphasizes the roles of power and of conflict between groups with contradictory interests in shaping occupational composition. The factors such as custom, stereotypes, prejudices, male workers' pressure and their aspiration to preserve their advantages influence employers'ranking decision of workers. In like manner, the working conditions, autonomy, career opportunities, and gender composition influence workers' assessments of jobs. In the Reskin and Roos studies, women's inroads into the male dominated occupations during 1970s in US conform to this queueing process. When the opportunities for mobility, earnings, and job autonomy declined in occupations such as clerical works, teacher, insurance sales, men sought better jobs elsewhere. When employers could not attract and hire enough qualified male workers, female workers entered these jobs. Although women made some progress in desegregating traditionally male occupations, when they finally achieved access to them, the occupations by then had lost most of their attraction to men. Consequently they became less advantageous for women as well. Accordingly, these factors contributed to occupational feminization. In addition, they found that, in these occupations, women were generally concentrated in the lower-paying, less desirable positions. Thus, gender desegregation in these occupations failed to diminish the wage gap between men and women.

Our empirical study of gender discrimination in Turkish higher education in Chapter 6 is consistent with this queueing theory. When the salaries in the universities became so low, relative to other business during 1980s, some male academics resigned and sought jobs in the private sector and consequently the gender balance of the academic labour force switched towards females. For example, women showed a higher growth rate at every level of academic employment between 1984/85 and 1997/98 (see Table

6.4). Despite women's inroads into this sector recently, it has not changed their position in the academia, they are still concentrated in the lower status jobs such as specialist language instructor and translator.

2.5 Indirect Test For Discrimination

The most common indirect technique to measure wage discrimination was developed by Oaxaca (1973) and Blinder(1973). Principally, it is assumed that, in the absence of discrimination, members of each group would receive payments according to their productivities, but in the case of discrimination pay differences between two groups are not related to productivity differentials. The object of the 'decomposition technique', to test for the existence of wage discrimination, is to separate the effects of human capital differences and the effects of discriminatory behaviour between the different groups of people.

Although in Chapter 4 this approach will be explained in detail, here we provide a general explanation. Firstly the earnings or wage regressions are separately estimated for each group, namely men and women. The means of the natural logs of male (m) and female (f) wages are denoted as ln(Wm) and ln(Wf) . When we estimate the standard log wage separately for males and females, then the fitted regression line passes through the point of sample means. This implies that

$$\ln(Wm) - \ln(Wf) = Wm\beta m - Xf\beta f \qquad 2.1$$

where Xm and Xf are vectors containing the means of the variables for males and females, and βm and βf are the estimated coefficients. Given this result, the log wage

differences can be decomposed in two ways such as: $\Delta X = Xm - Xf$, and $\Delta\beta = \beta m - \beta f$, and we can write (2.1) as follows:

$$\ln(Wm) - \ln(Wf) = \Delta X\beta m + Xf\Delta\beta \qquad 2.2$$

$$\ln(Wm) - \ln(Wf) = \Delta X\beta\ f + Xm\Delta\beta \qquad 2.3$$

The first term on the right hand side of either equation 2.2 or 2.3 is that part of the wage discrepancies, which is due to the differences in productivity-related characteristics between men and women. This is non-discriminatory or 'explained discrimination'. If women and men have different productivity characteristics such as work experience, for example a woman has 5 years experience and a man has 8 years experience, they will be paid differently and according to this example men will be rewarded because of their greater work experience. The second term on the right hand side, which is that part of the wage differential due to different β coefficients including the constant term, is upper-bound of 'unexplained discrimination'. This means that men and women with the same productivity characteristics are rewarded differently. In other words, if there is no discrimination, men and women would be paid the same, according to their productivity-linked characteristics, and differences in wages would be due only to differences in productivity-related characteristics. Therefore the second term is defined as that part of the wage differential due to discrimination (Neumark, 1987, p.281).

It should be mentioned that the two equations (2.2) and (2.3) yield different results. For example in Oaxcaca's empirical research, using data on whites, equation (2.2) deduces that 52.9 per cent of the male and female differences is due to discrimination,

but equation (2.3) produces an estimate of 63.9 percent. Therefore, as Oaxaca (1973) identifies, the choice between the equation (2.2) or (2.3) to measure wage discrimination is a classic index number problem. So, the valuation of discrimination will be depend on the decision on which weights to apply.

Moreover, it must be noted that, in addition to the index number problem, this approach can sometimes yield an overestimate or underestimate of the actual discrimination. On one hand, conventional data sources do not provide for the measurement of all productivity-related characteristics. In relation to this if, on average, men are more qualified than women with respect to these omitted variables, discrimination will be overestimated. However, differentials with respect to some productivity-related characteristics arise from 'the indirect effects of discrimination' produced outside labour market. For instance, women may face discrimination in access to education. These kind of restricted opportunities can affect the individual's choices about gaining human capital. Therefore, the characteristics, namely, education, training, actual labour market experience, tenure, can potentially be impacted by feedback effects. The estimation of wage discrimination can be underestimated to the extent that factors reflecting other dimensions of discrimination are not used in regression analysis (Blau and Ferber, 1987, p.317, and Darity, 1995).

In short, Blau and Ferber (1987) conclude that "neither productivity nor discrimination itself is directly observable, some skepticism has arisen about the adequacy of this technique for measuring discrimination" (p.318).

2.6 Direct Test for Discrimination

During the 1970s and 1980s the most popular technique for establishing whether or not discrimination exists in the labour market was regression analysis (Oaxaca, 1973; Zabalza and Arrufat, 1985; Killingsworth, 1990). These statistical studies applied statistical inference to produce indirect evidence of discrimination. However there are also procedures to provide direct evidence of discrimination in labour market.

In 1966 'audits' or 'situation tests' were first used to determine the extent of discrimination in UK by the Political and Economic Planning researchers in London. Later, in 1973, the same method was applied for measuring housing and labour market discrimination in UK by McIntosh and Smith. This method involves the sending paired professional actors to landlords to investigate for discrimination in housing market and to employers to examine for labour market discrimination (Darity, 1995).

However the method of sending actors to interview was criticized on the ground that it may yield biased results. Although the method contains the use of white applicants as a control group, it does not guarantee that applicants behaviour is exactly the same when they interact in person with the employers or the agents. For instance, black applicants consciously or unconsciously may try to prove the discrimination against them and therefore bias the results (Riach and Rich, 1991-92). The alternative technique of 'correspondence testing', i.e. sending letters in response to advertised job vacancies to measure labour market discrimination directly was devised by Roger

Jowell and Patricia Prescott-Clarke in 1969 for evaluating the degree of racial discrimination in the UK labour market.

This technique is described by (Riach and Rich,1991-92) as "sending carefully matched pairs of written job applications in response to advertised vacancies, to test for discrimination in labour hiring at the initial stage of selection for interview. To avoid detection, the letters apparently cannot be identical, but in all basic characteristics, like age, experience, and qualifications, candidates are closely matched so that the only effective distinguishing characteristic is race" (p.145-46).

The advantage of the corresponding tests is that there is the ability to apply absolute control over the content of applications, i.e. making sure that all job-related characteristics are accurately paired so that applicants are distinguished only by gender or race. On the other hand, the shortcoming of the method is that "it only tests for discrimination in labour-hiring at the initial stage of selection for interview. ...Thus corresponding testing does not measure the full extent of discrimination in the hiring desicion, but, on the other hand, it does highlight one quite decisive form of discrimination - that of denying the applicant the chance even to compete for a job" (Riach and Rich, 1987, p. 166).

Correspondence testing has been used to measure racial discrimination in the British labour market by Jowell and Prescott-Clarke (1970) Brown and Gay (1985), and also the Australian labour market by Riach and Rich (1991-92). In addition, it has been used to measure gender discrimination in the Australian labour market by Riach and

Rich, (1987). It was found from these studies that there is a significant racial and gender discrimination in hiring process in both countries.

2.7 Previous Studies

Table 2.1 presents the findings of several studies, which attempt to estimate earnings, differentials between men and women on the basis of worker characteristics. As can be seen from the Table, generally the productivity-related characteristics of workers account for only a small portion of the difference in earnings, except in a small number of studies, notably Corcoran and Duncan (1979), Mincer and Polachek (1974). The success of these two studies in explaining earnings differentials can be assigned to their use of a measure of actual work experience. According to the human capital explanation, work experience plays a very important role in women's lower relative earnings. When the data sets for actual work experience of workers do not exist, researchers use potential experience as a proxy for actual experience. Potential experience is usually calculated from age minus schooling minus school starting-age. It is believed that, although potential experience is a reasonable proxy for men's actual experience because of their continuity of participation in work, it is not really a satisfactory proxy for married women's actual experience. Mincer and Polacheck (1974) showed that estimation of women's wage equation, using potential experience, leads to an underestimate of the rate of return to work experience (Wright and Ermisch, 1991, p.8).

However, more recently, Wright and Ermisch (1991) studied the gap between women's and men's pay in Great Britain by applying the Oaxaca decomposition technique and using, for the first time, nationally representative data on women's

employment histories. They claimed the dangers associated with using potential work experience in testing wage discrimination between men and women, as done in earlier studies of British women's wages by Zabalza and Arrufat (1985), and by Miller (1987), acutely underestimated the level of gender discrimination. It also exaggerated the effect of the anti-discriminatory legislation of the 1970s. Wright and Ermisch (1991), using actual work experience in their earnings functions for women, found that the level of discrimination against women, based on the Oaxaca decomposition technique, is 20-25 per cent. This result is around four times that of Zabalza and Arrufat (1985) and also somewhat larger than that found by Miller (1987). Finally Wright and Ermisch (1991) maintained that " our evidence supports the hypothesis that work experience is endogenous in women's labour force participation decisions, but is exogenous in the determination of women's wages" (p.24).

Gunderson (1989) argues that the empirical results of the extent of discrimination will be underestimated because the differentials between men and women in productivity-related characteristics and also occupational characteristics themselves may reflect discriminatory process in employment and training itself.

Table 2.1 Summary of Studies Accounting for gender discrimination in Earnings on the Basis of Worker Characteristics Only

Study	Data Base	Explanatory Variables	Women earnings as a ratio of men's	
			Observed[a] $=U_t$	Adjusted[b] $=A_t$
Blinder (1973)	White persons, except household heads younger than age 25 and household heads who did not work for money, 1967	Age, region, parents' income, Father's education, place of birth, number of sibling, health, local labour market conditions, geographic mobility, seasonal employment	0.54	0.54
Cohen (1971)	Full-time workers aged 22-64, and self-employed with a steady job, who worked 35 hours or more per week, 1969	Hours worked, fringe benefits and absenteeism, seniority, education, unionization	0.55	0.74
Corcoran (1979)	5,000 white male heads of households and wiwes, and female heads of households, 1976	Work history	0.67	0.76
Corcoran and Duncan (1979)	Household heads and spouses, 1976	Work history, labour force attachment, education, size of city, region	0.74	0.85
Daymont and Andrisani (1984)	National Longitudinal Studies of the high school class of 1972, 1979	Work experience, job preference in high school, college major, highest degree, family situation	0.93	0.96
Fuchs (1971)	Nonfarm employed persons, 1960	Colour, schooling, age, city size	0.60	0.61
		Colour, schooling, age, city size, marital status, class of worker, length of commute	0.60	0.66
Mellor (1984)	Full-time wage and salary workers, 1982	Age	0.65	0.65
		Years of schooling		0.64
		Hours worked		0.68
Mincer and Polachek (1974)	White married men and women aged 30-44, 1967	Education, experience, work history	0.66	0.81

Oaxaca (1973)	Urban employees age 16 and over, reporting an hourly wage, 1967	Experience, education, health, part-time, migration, marital status, children, city size, region	0.65	0.72
Ragan and Smith (1981)	Workers employed with pay in certain manufacturing industries, 1969-1970	Education, experience, marital status, race, health, region, urban residence, federal worker, turnover rate	0.71	0.84
Rytina (1982)	Wage and salary workers aged 25 and over, 1981	Occupational tenure	0.65	0.67
Sandell and Shapiro (1978)	White married men and women aged 30-44, 1967	Education, experience, work history	0.66	0.74
Sawhill (1973)	Employed wage and salary workers, 1967	Race, region, age, education, weeks worked per year, hours worked per week	0.46	0.56
Tsuchigane and Dodge (1974)	Year-round workers, 1970	Hours worked, education, job seniority, absenteeism	0.54	0.68

Source: Willborn, S., 1986, *A Comparable Worth Primer*, Lexington Books, Massachusetts/Toronto, pp. 13-15.
Notes: U_t= the ratio of mean female earnings or income to mean male earnings.
A_t= adjusted mean-earnings ratio, which is the ratio of the conditional mean earnings of women to the mean earnings of men. The conditional mean earnings of women is the earnings predicted for women if they had the same values of the explanatory variables as do men.

Table 2.2 shows the studies, which use the occupation, or occupational characteristics, in addition to human capital characteristics, such as education and experience in their model. As is seen from the Table, the studies, which used the occupational characteristics as an explanatory variable, as well as human capital characteristics, explain more wage discrimination than the studies that used only workers characteristics. Treiman and Hartmann (1981) point out that, using more detailed and

specific occupations in studies of gender discrimination, tends to account for more of the differences in earnings, than more general studies. In addition, Brown, Moon, and Zoloth (1980) reveal that disparities in the occupational distribution between men and women are the significant cause of male/female wage differences. Previous studies had usually focused on only the gender segregation or wage discrimination, but in their study, they develop an approach that "decomposes the wage differences between male and female into occupational and wage components" (Brown, *et al* 1980, p.4). They found that only 14 per cent of the wage discrepancies are attributable to differentials in abilities and qualifications, but the greater unexplained differences come from uneven occupational distribution between men and women.

The following number of important generalisations emerges from the studies that are shown above. First, the greater the number of variables used to explain for productivity-related characteristics, the smaller the productivity-adjusted wage gap relative to the observed gap. The process of including explanatory variables tends to decrease unexplained wage differentials, but even when they use an extensive list of explanatory variables, most of the studies still find some unexplained residual which is usually attributed to discrimination (Gunderson, 1989). It is shown in several studies that occupational segregation accounts for more of the earnings differences, than does unequal pay for the same work (Gunderson, 1985; 1989; Millward and Woodland, 1995). Women and men are segregated into different occupations and industries, and women are disproportionately employed in those which are generally lower paying.

Table 2.2 Summary of Studies Accounting for gender discrimination in Earnings on the Basis of Worker Characteristics and Occupational Characteristics

Study	Data Base	Explanatory Variables	Women earnings as a ratio of men's	
			Observed[a] $=U_t$	Adjusted[b] $=A_t$
Blinder (1973)	White persons, except household heads younger than age 25 and household heads who did not work for money, 1967	Age, region, Education, vocational training, occupation, union membership, veteran status, health, local labour conditions, geographical mobility, seasonal employment, length of time on job	0.54	0.70
Brown, Moon And Zoloth (1980)	White males aged 45-59, 1966. White females aged 30-44 in 1967, 1971 data	Education, experience, part-time work, health, union membership, region, marital status, occupation	0.62	0.98
Featherman and Hauser (1976)	Civilian noninstitutionalized men, married with spouse present, aged 20-64, and their wives, 1973	Education, occupation, hours worked, experience	0.38	0.48
Ferber and Spaeth (1984)	Random sample of Illinois residents employed at least 20 hours per week on a single job	Experience, hours worked, education, marital status, industry, size of firm, supervisory authority, control over money, sex of supervisor	0.49	0.78
Filer (1983)	Unique set developed by author from records of management consulting firm, 1967-1977	Race, age, military service, childhood environment, marital status, industry education, intelligence, personality valus	0.64	0.77
Mellor (1984)	Full-time wage and salary workers, 1982	Occupation, Industry	0.65 0.65	0.70 0.68

Oaxaca (1973)	White urban employees, age 16 and over, reporting an hourly wage, 1967	Experience, education, class of worker, industry, occupation, health, part-time, migration, marital status, children, city size, region	0.65	0.78
Ragan and Smith (1981)	Workers employed with pay in certain manufacturing industries, 1969-70	Education, marital status, race, health, experience, region, residence, federal worker, turnover rate, occupation	0.71	0.84
Roos (1981)	Noninstitutionalized currently employed white workers aged 25-64, 1974, 1976, 1977	Age, education, hours worked, occupational characteristics, industry	0.46	0.63
Sanborn (1964)	Employed civilian wage and salary earners, 1949	Occupation, hours of work, education, age, urban-rural status, race	0.58	0.76
		Above, but more narrowly defined occupations	0.58	0.82
		Above, plus turnover, absenteeism, work experience	0.58	0.88
Treiman and Hartmann (1981)	Persons employed in occupations employing a minimum of 1,000 male and 1,000 female employees and reporting wage and salary earnings, 1970[c]	12 occupational groupings	0.62	0.63
		222 occupational groupings	0.64	0.68
		479 occupational groupings	0.63	0.70
Treiman, Hartmann and Roos (1984)	Census data for entire U.S. labour force, 1970	Education, experience, complexity of job, motor skills required by job, physical demands of job, working conditions	0.57[d]	0.83[d]

Bayer and Astin (1968)	Persons who received doctorate in natural science or social science between 1957 and 1962 who are employed full-time in academic settings, and whose primary work activity is teaching, 1964	Length of employment, type of employer, academic rank	0.93	0.84/0.99
Gordon, Morton And Braden (1974)	1,000-2,000 academic employees of a large urban university	Age, seniority, race, education, rank, department	[e]	0.89
Hirsch and Leppel (1982)	487 full-time, tenure-track faculty of a state university, 1980-1981 academic year	Experience, rank, department, terminal degree, administrative appointment	0.89	1.00
Malkiel and Malkiel (1973)	272 professional employees of a single corporation, 1969	Education, experience, publications, marital status, area of study, absence rate, job level	0.64	0.99
Remus and Kelly (1983)	21-28-year-old graduates of the business school of a single university	Ethnicity, type of job, participation rate, college major	0.81	0.81
Zabalza and Arrufat (1985)	General Household Survey for 1975, Great Britain	Years of schooling, labour market experience, health, race, occupation, industry	0.62	0.80

Source: Willborn, S., 1986, *A Comparable Worth Primer*, Lexington Books, Massachusetts/Toronto, pp. 20-23

Notes: U_t= the ratio of mean female earnings or income to mean male earnings.

A_t= adjusted mean-earnings ratio, which is the ratio of the conditional mean earnings of women to the mean earnings of men. The conditional mean earnings of women is the earnings predicted for women if they had the same values of the explanatoty variables as do men.

[c] = The study reports that it is based on 1970 census data at one point and on 1980 census data at another point. It is more likely that it was based on 1970 data.

[d] = This ratio is mean earnings in female-dominated occupations to mean earnings in male-dominated occupations instead of mean earnings of females to mean earnings of males.

[e] = Not reported.

Generally, it can be seen above that a large body of literature has examined the determinants of earnings of males and females in the developed (high income) countries using the human capital framework. However, there is a relatively smaller number of studies on discrimination in the developing (low income) countries.

Knight and Sabot (1991), using the Oaxaca decomposition technique, examined the race and gender discrimination in Tanzania's manufacturing industry in 1971, and found that the mean wages of females are significantly lower than the mean of male wages. The differences between wages were explained almost completely by gender discrimination. Only small parts of gross differences were explained by differentials in human capital endowments such as education, work experience and training. Thus in manufacturing sector of Tanzania, male workers are rewarded more than female workers with the same human capital endowments.

Likewise, Birdsall and Fox (1991) studied the income differences between man and women school teachers in Brazil. They remark that there is evidence of wage discrimination, but three-quarters of the disparities in income were related to differentials in productivity-linked characteristics.

M. Duraisamy and P. Duraisamy (1996) examine the wage advantage of males over females in the labour market for persons with post-secondary schooling in India. Their study is the first set of estimates on gender discrimination in the Indian labour market using the decomposition technique. They found that about 67 to 77 percent of the gap between male and female earnings can be attributed to discrimination.

Moreover, they conclude that an examination of the sources of discrimination shows that labour market experience provides an advantage to men, while education is favorable to women.

As far as Turkey is concerned there is virtually no empirical or theoretical work on labour market discrimination. Econometric tests of wage discrimination have not been applied, due to lack of data for the Turkish labour market. Hovewer, Ecevit (1986) who is a sociologist, studied women's work and wages using interviews in the Turkish manufacturing sector. She observes, from the interviews with Turkish manufacturing workers in Bursa, that women's wages are lower than those of men, and women are centered in labour-intensive and low income industries. In addition, The World Bank (1993) report demonstrates, using index methods, namely; Dissimilarity index, and Women and Employment index, that there is a very significant occupational gender segregation in Turkish labour market.

CHAPTER 3

AN OVERALL PICTURE OF WOMEN IN TURKISH LABOUR MARKET

3.1 Introduction

Before presenting the analysis of wage discrimination and occupational gender segregation in the Turkish labour market (in the Chapter 4, and the Chapter 5 and 6 respectively), we need to examine the social, political and economic and legal environment of women in Turkey to better understand their situations and treatment in the labour market.

In Chapter 2, we have explained that gender discrimination in the labour market is related to the structure of the labour market, differentials in human capital investment such as education, on-the-job training, and also cultural and traditional beliefs and norms among employers and within society towards women. In this Chapter we analyse economic, social and cultural factors which determined the position of Turkish women in the labour market.

Turkey is the only Islamic country in the Middle East where religion is separated from the state affairs. The principle of secularism is given prime importance in each Turkish constitution (1924, 1961, and 1982). By adopting the Swiss Civil Code in

1926 Turkey became the first Muslim country to eliminate the sharia, the Islamic legal code that encourages gender segregation and unequal treatment.

After the First World War, the Ottoman Empire disintegrated and the new state of the Turkish Republic was established under the leadership of Mustafa Kemal Ataturk who put into action a series of reforms to modernise the republic. The reforms, which took place between 1926 and 1934, included suffrage rights for women, more equality between men and women in marriage, divorce, property and inheritance affairs, equal access to education. As Abadan-Unat indicates (1981) "women in Turkey have come to some degree of revolutionary consciousness primarily by way of the ideas, the actions and the organizations initiated by Ataturk, and his closest friends and colleagues" (p.1). However, as these men had grown up in the Muslim society, they kept women dependent through the civil code, which, for example, ruled that the husband was the head of family and that married women could only work with husbands permission, whilst providing certain formal opportunities to women (Kandiyoti, 1995). Women from middle and upper class elite urban families chiefly benefited from these reforms and educational opportunities. Because of the encouragement of women in the early Republican period, today the educated urban women are well represented among professional jobs and in academia compared to many middle-income, developing countries. However it is observed that the position and status of the majority of Turkish women (especially rural) have not very much changed since the beginning of the Republic days (Abadan-Unat, 1986; World Bank, 1993).

As Turkey is a secular country and nearly 99 percent of the population is Muslim, the situation of women is very complex and differs between the very educated

professional minority women in the big cities and the majority of women in the rural area. While women's social and economic lives are determined mainly by cultural traditional and patriarchal values, which inhibits their activities both in the family and the labour market, a minority of women in major cities benefit from the equal education and employment opportunities.

Oncu (1981) shows that in Turkey women in the highest-ranking professions predominantly come from urban, professional and civil service backgrounds. Firstly "within the context of overarching class inequalities in developing countries, the ready availability of lower class women as domestics in private homes 'emancipates' upper class women to pursue professional careers. Secondly in the face of deliberate state policies aimed at the rapid expansion of professional cadres, maintenance of elite recruitment patterns is only possible through the infusion of women" (Oncu, 1981, p.193). Therefore women from certain backgrounds were encouraged to enter professions and academic area. For instance, in the 1935 elections where an informal quota system was implemented, 4.6 percent of the elected 395 members of the parliament were women which is the highest ratio so far. According to last election result (1991), 1.8 percent of the 450 members of the parliament are women (see Table 3.1). Also in 1947, 44 percent of all staff in the Natural Sciences faculties were women. As it will be explained in Chapter 6, although the educated urban women in Turkey are well-represented in the professions compared to many middle income developing countries, after the year of 1940s there has been a decline in their participation rate due to the decrease in the effectiveness of the Kemalist ideology (Acar, 1991; World Bank, 1993). Kemalist ideology -the political philosophy and programme of the People's Republican Party founded by Kemal Ataturk –is generally

defined through its six basic principles: nationalism, popularism, statism, revolutionism (reformism), secularism, and republicanism (Tekeli, 1992).

According to the Turkish Demographic Survey, women represent 49.55 per cent of the population in 1992. Women's position and status has not changed very much since the 1920s, the beginning of the Turkish Republic. Although the illiteracy rate of 67.5 percent in 1955 declined to 19 percent in 1990, Turkish illiteracy still falls behind many developed industrialized countries such as the UK, Germany, where illiteracy rate is under the 5 percent (World Bank, 1995). In 1980 the rate of illiteracy among women over the age of 15 was 56.2 percent, on the other hand men's illiteracy rate was 23.5 percent in the same year. However in 1990 this rate for women declined to 29.2 percent whereas the corresponding rate for men was 9.4 percent. The discrepancy in literacy is very noticeable between men and women and also between women in different regions (see Table 3.2 and 3.3).

Moreover, Turkey has experienced a significant decline in fertility since last 30 years. The total fertility rate, defined as average number of children born to each female, was 5.4 in 1970 and in 1995 it is estimated around 2.9 children per women (DGSPW, 1995). It is thought among social scientists that there is relationship between education and fertility. Population surveys in Turkey also shows that the relation between fertility and education is negative (Ozbay, 1981). However the total fertility rate displays important regional disparities (see Table 3.4). Because of the continuing prevalence of traditional and cultural values and beliefs, the strong preference for sons and economic and social use of children the ongoing high fertility in rural areas is still present.

The remainder of the Chapter is organised as follows: In Section 2, the structure of Turkish labour market will be explained by the following headings; Hiring and firing of employees, Working hours, Trade Unionism, Employers attitudes towards women, unemployment of women and cultural restrictions. Section 3 examines the trends of female labour force participation and determinants factors such as marital status, age and education. Employment status of women in the labour market is discussed in Section 4. In section 5, occupational distribution and gross earnings differentials will be studied. In Section 6, the legal framework like the Constitution, Civil Code and Labour Laws and regulations which play a very important role in the employment and wage determination of women will be provided. In addition the government policy and attitudes towards the economic status of women and also Non Governmental Organizations (NGOs) activities will be mentioned in Section 7. In the final section, we will summarize the main points of the Chapter.

3.2 Structure of Turkish Labour Market

The Turkish labour market has been going through a large structural transformation from agriculture to industry and services since the 1970s, although agriculture still plays an important role in the economy. Agriculture's share of total employment was 45 percent in 1994, as compared with 6 percent in 1994 in the other OECD countries. However non-agricultural employment grew at 4.7 percent annual rate over the period 1950 to 1990 (OECD, 1996).

Turkey has experienced strong growth rates during the periods 1965-1980 and 1980-1990, 6.2 percent and 5.1 percent respectively. According to the World Bank (1995) the average growth rates of the upper middle income countries have been around 6.3

percent and 2.5 percent for the 1965-1980 and 1980-1990 periods respectively. The reason for fast economic growth comes from the relatively rapid process of industrialization. It is demonstrated in Table 3.5 (see appendix 1) that the share of the non-agricultural activities in the real domestic products (GDP) has been increasing recently. In 1993, 30 percent of the real GDP was generated by industry and 55 percent was by services, which has been the other fast growing sector. While the highest share of employment remains in the agricultural sector (45 %, 1994), the contribution of this sector to real GDP was only 15 percent in 1993 compared with 30 percent in 1970 (World Bank, 1995).

The majority of women workers are engaged in agricultural activity: 71.93 % of female workers compared to 32.84 % of males in 1992. However, female role in agriculture does not have implications for elasticity of cheap labour supplies to other sectors. Impediments to female mobility between agriculture and industrial sector, because of the very limited education of women in rural areas do not equip them for alternative employment. The important thing is that 92 % of women are working as unpaid family members, and only 3 % receive a wage. Five per cent are self-employed in agriculture (World Bank, 1993). Since agriculture is outside the coverage of the Labour Law and social security provisions (as will be explained later), we may conclude that the role of these women in the economy is totally ignored.

On the other hand, the labour law regulates the organization of work in the non-agricultural activities. Neither women in agriculture nor women working in the informal urban sector, such as domestic and homebased workers, are covered by the Labour law.

Civil servants have special rights. The Civil servants law regulates civil servants rights and responsibilities, salaries and allowances, duties and powers and other matters related to their status. Although they have not had trade union freedoms, they enjoy job security. Also, the law does not make any distinction based on gender as to employment or conditions of work. On the other hand the protection of the maternal functions of women civil servants are provided by the law: they are entitled to paid maternity leave three weeks before and six weeks after birth. Also they can have the following six months on unpaid maternity leave. The workers who are entitled to Labour Law which sets the basic rules of workers-management relations in the labour market, will be specified in detail in the Section 3.6.

In this study, we will apply the population census data to test occupational gender segregation in Turkish labour market. Both workers in private and public sector and civil servants are included. In addition, we will measure occupational gender segregation in the higher education institutions, where the employees are covered by the civil servants law. In Chapter 4, we will investigate wage discrimination within manufacturing sector and in branches of economic activity such as electricity, gas and water, in which workers are covered by the Labour law.

Employees in the paid urban market are not covered by a single social security system and also the coverage is very limited. The Republic of Turkey Retirement Funds covers permanent civil servants and those on fixed contract. The Bag-Kur is an independent retirement funds and covers the self-employed and housewives and the social security institution covers workers. The World Bank report (1993) notes three schemes have not been successful and it need to be combined and reformed.

There are huge disparities between men and women in terms of the benefits for social security, as is seen from Table 3.6. About 15 % of women were covered by social security, compared with men 84 % in 1994 in Turkey. The majority of women in the social security system are covered by the Republic of Turkey Retirement Funds (51.6 %). On the other hand, the majority of men are covered by Social Security Institution (51.1 %). This shows that women who work as civil servants in public employment can get more equal treatment in terms of social security benefit than women in industrial sector working as wage workers.

Table 3.6 Women in Social Security Systems in 1994

	Female	Female (%)	Male	Male (%)
The Social Security Institutions	418 122	30.1	3 784 494	51.1
The Independent retirement funds	254 258	18.3	2 446 140	33.0
The Republic of Turkey Retirement Funds	715 585	51.6	1 180 415	15.9
Total	1 337 965	100	7 411 049	100

Source: DGSPW, 1996, p.16.

3.2.1 Hiring and Firing of Labour

Hiring procedures differs according to occupations in the public or private sectors and small and large enterprises. The vacancies in professional and managerial occupations in both the private and the public sector are advertised in the most well-known newspapers nationwide. Applicants are entered firstly in written examinations and if they pass this exam they are called to interview. There are widespread concerns that hiring generally depends on nepotism, rather than qualifications for the

job at the interview stage in public sector. On the other hand in private sector, women or men are selected in relation to their qualifications and experiences on the job.

Vacancies for manual and production-related occupations and services, clerical and sales in large enterprises again are advertised in the well-known papers and applicants are selected for interviews and offered jobs according to their suitability for the work. The available jobs in the small factories or rural areas are advertised by informal ways: 'word of mouth' communication to relatives or neighbors. Although the job centres are regulated by the labour law to find workers for employers, and jobs for those seeking employment, in practice this sector does not work efficiently. Therefore, finding jobs is not very easy for both men and women because of the nepotism in public sectors and the informal ways of advertising jobs in small factories.

In addition women are traditionally seen as a homemakers and men are as a breadwinners, therefore when employers make the decision to employ workers, priority is given to men (Ecevit, 1991).

While the civil servants in public sectors have job security, according to the Labour law there is no job security for workers with the exception of trade union representatives. The employers have the absolute right to dismiss workers for any reason whatsoever. The worker can be entitled to certain types of compensation but cannot demand reinstatement in the event of an abusive or discriminatory dismissal. Employers can claim 'immoral conduct on the part of the worker' as grounds for dismissal in order to avoid giving any type of compensation, and the burden of

rebutting this allegation falls on the worker. Generally, a laid-off worker will refrain from applying to the court due to the expense and time involved, and also because other workers are reluctant to stand witness against the employer. In addition we must note that, according to the Turkish labour law, an employer can dismiss a woman because of her pregnancy or confinement. As is seen there is lack of job security for workers in Turkish labour market (Suzek, 1990; World Bank, 1993, p.99).

However, resignation, is not very easy and is limited according to law. A worker employed with a labour contract for an indefinite period who wishes to resign either has to give a notice period (Article 13) or terminate with a just cause (Article 16). There are three types of 'just causes': which are the immoral conduct of the employer, and force majeure (the workplace not functioning for a period of more than a week due to unforeseen reasons such as fire, flood or breakdown of the machines), and health (work being hazardous to the worker's health and unknown at the time of employment). Workers can only get severance pay if they resign according to Article 16. Resignation for any other reasons, according to Article 13 does not provide entitlement to any severance pay. Entitlement to severance pay is very important because there is no national scheme of unemployment insurance in Turkey. It is worth noting that the exception to article 13 implemented in 1983, which provides that when a woman resigns within a year of her marriage she can claim severance pay. This exception was not implemented to protect women, but in fact to encourage their resignation after marriage so as to create vacancies for the unemployed, especially men.

3.2.2 Hours of Work

The average hours of work are one of the important determinants of the female labour supply alongside the rate of labour participation. According to Turkish Labour Law, maximum working hours are forty-eight per week, but it can be changed slightly because of the difficulties of controlling factories, especially small ones. As the labour law does not affect small establishments (employing ten or less than ten employees) they can practise different hours of work for their workers.

As displayed in Table 3.6, women on the average work 43 hours per week compared to 50 hours for men. While this rate may seem low compared to the male rate when the time spent doing household duties and childcare, which are mainly women's responsibilities, are taking into account, the total real hours of work exceeds men's hours of work. It is worth mentioning that in the OECD countries the ongoing growth of female labour force participation has been accompanied by a general reduction in average annual hours worked and by a noticeable increase in part-time work. Most of this growth in part-time employment has been concentrated in conventional female activities such as clerical, sales and services. However, in Turkey part-time employment is very rare and relatively recent therefore there is no information on it (World Bank, 1993).

3.2.3 Trade Unions

Trade unions are an important factor determining workers wages and condition in the workplace. The unions, through collective bargaining (management-union negotiations) are able to influence some issues, which have direct implications for equality of men and women in the workplace, such as training, hours of work, wages,

and promotion systems. However the role of trade unions in relation to gender disparities in the labour market are not very well known in developing countries (Anker and Hein, 1986; Ecevit, 1986, 1991).

Table 3.7 Unionisation in Both Public and Private Sectors in Turkey by Gender, 1995

		Total Number of Workers	The Number of Unionised Workers	Unionisation Ratio (%)
Female	Public Sector	72 646	45 215	62.2
	Private Sector	346 528	116 024	33.48
	Total	419 174	161 239	38.47
Male	Public Sector	909 894	1 057 257	116.2*
	Private Sector	2 576 050	1 448 518	56.2
	Total	3 485 944	2 505 775	71.8
Total	Public Sector	982 540	1 102 472	112.2*
	Private Sector	2 922 578	1 564 542	53.53
	Total	3 905 118	2 667 014	68.30

Source: DGSPW, 1996, p.11.

Note: According to Article 24 of the Trade Union Law, the membership status of a unionised worker will remain unaffected in the case of a temporary unemployment. Additionally, Article 25 of the Trade Union Law states that the membership status of a unionised worker will continue one more month after the worker leaves the union. Therefore, as the articles 24 and 25 keep the membership status of a unionised worker unaffected, the number of unionised workers, on the Table 3.7, in some cases, can be more than the total number of workers.

Until recently, as Aksoy (1980) and Ecevit (1986) explain, information about workers' unionisation level was only available by the number of unionised workers by only industry not by gender. But thanks to the efforts of the Directorate General on the Status and Problems of Women (DGSPW), (see more information in section 7.1)

we have been able to obtain data on the level of unionisation in both public and private sectors by gender for 1995.

As can be seen from the Table 3.7, women are generally under-represented in trade unions compared with their male counterparts. In 1995, about 38 percent of women were represented by trade union whereas this rate was around 71 percent for men. Women in the private sector were less likely to be members of trade union than those in the public sector (33.48 percent compared to 62.24 percent). Also Ecevit (1986) argues that generally women in the large factories, where her interviews were carried out, are more likely to be members of trade union than women working smaller factories in the private sector. The employers' anti-union attitudes and workers' concern about employers' disapproval of trade union in relatively small factories could be one of the reasons for this. Another reason could be the fact that, according to the Collective Labour Agreements, Strikes and Lockouts Law, Article 7(1), unions, which represent the majority in any particular industry, were permitted to negotiate with employers on behalf of the workforce. Consequently unions concentrate their recruiting efforts in the larger rather than smaller factories.

Ecevit's (1986; 1991) studies show that even when women belong to trade unions their membership is merely a formality and limited to the payment of union dues that already were automatically withdrawn from their wages. Also they rarely occupy post of responsibility. Furthermore, the local union officials paid little attention to the women workers and they did not see discrepancies in wages or the gender occupational segregation in workplace as a problem. They saw women's wages as supplementary to the men's wage and assumed that all women in society live with a

man: either their husband or their father. That is why they did not consider the lower wages of women as a problem and needing attention, also, they generally paid no attention to issues such as work conditions or health, training, courses for women and opportunities for women's promotion. In turn women workers were generally ignored by the union. women were less likely to attend meetings regularly and most of the women thought that trade unions did not give enough interest to working womens' problems (Ecevit, 1986, p.270, 272).

3.2.4 Unemployment of Women

Table 3.8 reveals that generally women suffer from more unemployment than men in both urban and rural areas. Also women in urban area tend to have higher rates of unemployment (19.8 % in 1994) compared to women in rural area (3.1 % in 1994). Rural women are traditionally employed in agricultural activities as unpaid family workers, and when they move to urban areas to find job outside the agricultural sector they have encountered difficulty. They face difficulty in participating in the urban labour force because of lack of education or experience in non-agricultural activities.

Table 3.8 Unemployment Rates by Gender and Rural – Urban in Turkey

		Urban 1988		Urban 1994		Rural 1988		Rural 1994	
		M	F	M	F	M	F	M	F
Unemployment Rate (%)	**A**	9.9	28.5	9.1	19.8	6.0	4.2	6.2	3.1
	B	29.7	43.8	29.3	45.6	25.7	35.2	29.0	30.8

Notes: **A**: Total, **B**: 15-24 age group, high school and higher education.
Source: DGSPW, 1995

Also a high level of unemployment is observed in at category B, which includes high school and educated unemployment people ages between 15-24 in both urban and rural. This arises from the employers' overt discrimination attitudes. If women are thought of as 'homemakers' and who work for pin money as a supplement to male earnings then first priority is given to men who are real 'breadwinners'. When educated women look for a job outside the agriculture in rural area they come across circumstance which are limit availability of jobs and involve discrimination against them, because of traditional beliefs and thoughts. As mentioned above (in Section 3.2.1), government creates employment problems for women by the Law promoting women's resignation after marriage to create vacancies for the unemployed.

3.2.5 Employers Attitudes and cultural restrictions towards the women

In Turkey patriarchal and traditional norms are still present and as Abadan-Unat (1986) reveals 'patriarchal and archaic values' play an important role in women's economic and social lives. Women's main role is seen as homemaking and men's is seem as prime breadwinners. Therefore these attitudes contribute to gender roles in society, and employer's beliefs and practices provide the occupational gender segregation and in turn these influence the level of wages paid to women.

Employers believe that women are more costly in terms of social benefits, for instance paid maternity leave, and they are thought to be more likely to leave their job because of childcare responsibilities. In addition, employers may be reluctant to hire women because the law expects nursing rooms to be provided, and fears of high labour turnover among women workers due to family circumstances and concerns over paying childcare expenses. On the other hand, from woman's point of view, it is

more costly to go out to work as she is often responsible for arranging and paying for childcare. Therefore, this tendency might outweigh the net take-home pay being less for women on average.

As we have seen in Chapter 2, the human capital theory claims that the greater turnover among women workers explains less investment on human capital by women and consequently their lower payments than men. While resignation of women workers generally happens when family responsibilities changes like marriage or children, resignation among men happens generally to get better job. Anker and Hein (1986) shows that in Ghana 10 percent of the women but only 1 percent of men did not change their job for more than 10 years. House's (1986) study in Cyprus found that men changed their job more often than women. In Turkey, Ecevit's (1991) study on Turkish factory workers reveals that, although these is a belief that women leave work when they marry, most women do not interrupt work when they marry. Even if they do give up a job because of marriage they return to work shortly afterwards due to the financial reasons. Also in Turkey the unemployment rate is generally high, for example it was nearly 9 % in 1994 (OECD, 1996), therefore changing jobs to find new one is not very, easy especially for women who have more limited job opportunities.

Employers are deterred from hiring women because they find women's pregnancy and childbirth very costly, such as payment of maternity leave. Also there are indirect costs of replacement of the worker during maternity leave compounded by the fear of women worker may not return to work after birth. Therefore they are reluctant to employ them, or they fire woman when they get pregnant or get married. According

to the Turkish Labour Law an employer can discharge a woman because of pregnancy.

However, as stated by the Turkish Labour regulations, workplaces employing between 100-150 women workers are required to establish nursing rooms and those employing more than 150 must set up nursing rooms for the care of children less than 6 years old. But in practice the regulations do not seem to be enforced and generally employers hold workers numbers right below these numbers to escape from the Law. In addition if these nurseries are available already they are very costly and only middle class and or professional women are able to benefit it. Unlike developed western countries such as the UK and US etc., in Turkey working mothers are generally dependent on their own families such as mother, mother-in-law, or even sometimes their own older children for childcare. Employers' beliefs about women's absenteeism and turnover are not valid for all women in the labour market. When they act on the basis of such beliefs and traditional views they may practise 'statistical discrimination' against women who in fact do not carry average of their gender characteristics (see Chapter 2, section 2.3.2).

Some research reveals that employers also consider that some jobs are more suitable for women because of their gender-attributed characteristics such as patience, passivity or accuracy etc.; on the other hand physical strength, technical ability etc., are attributed to the male workers (House, 1986; Ecevit, 1991). Jobs are separated into the 'light jobs', which are labour intensive and women's jobs and 'heavy jobs'which requires lifting and carrying heavy materials and are men's job. This kind

of belief in the suitability of men and women for particular occupations inhibit women's employment opportunities.

Cultural restrictions also contribute to determining which jobs are suitable for women and which jobs are not, and in some countries women are effectively excluded from certain occupations. For example in most Muslim countries (Egypt, Iran, etc.) women are banned from interacting with unknown men in public therefore they are prohibited from working in sales and service occupations (Youssef, 1971; Anker, 1997). However in Turkey, religious views about women of this nature are not as acceptable as in other Muslim countries. This is because of the principle of secularism, which was implemented in 1924 to eliminate Islamic rules that underlies the segregation between male and female.

3.3 Labour Force Participation of Women

The labour force, or economically active population, is defined as anyone who is 12 years old or over and classified as employed or/and as unemployed and actively seeking a job SIS, (1989). These definitions sometimes cause measurement problems of real labour force participation rate especially for women. Because in Turkey generally women work in the family business or in the farm or the household and most of these work activities are unpaid or seasonal or difficult to separate from family chores. Therefore these shortcomings need to be taken into account when we present the patterns of labour force participation rate (LFPR) below.

There has been a decline in the female LFPR in Turkey since the mid 1950s. While the LFPR for female was 72 percent in 1955 it fell to nearly 30 percent in 1994 (see

Table 3.9) which is very low when compared to OECD average of 59.1 percent (OECD, 1996). Also the male LFPR rate has been decreased during these period although by much less than for females.

Table 3.9 Labour force participation rates (12 years old and over)

	1955		1985		1994	
	Female%	Male%	Female%	Male%	Female%	Male%
Total	72.0	89.6	30.6	71.2	29.4	70.6
Urban	6.3	78.7	13.7	69.9	16.2	68.6
Rural	92.3	93.0	47.4	75.1	43.7	76.2

Source: For 1955-1985, World Bank, 1993, p.28, and for 1994 DGSPW, 1995, p.12-13.

This declining trend in the participation rate is not surprising for Turkey given the on-going structural changes in the economy. During the last 30 years Turkey has been experiencing huge transformation from an agriculture economy to an industrial one. This has accomplished with fast urbanization and has affected the composition of labour force. In addition there have been social changes, such as increasing educational attainments and opportunities and sectoral changes that moving from agricultural sector to service or industrial sector entails. In Turkey, migration from rural to urban affected negatively the female participation rate more than males because, while women have traditionally a source of employment in agriculture as unpaid family workers, they cannot participate in urban labour force after the migration.

It has been argued by (Weller, 1968; Psacharopoulos and Tzannatos, 1989, p.192; Presser and Kishor, 1991, p.53) that womens employment does not necessarily increase, at least not initially during the early stage of development, as countries undergo a decrease in the agricultural sector where women are generally employed. This decrease in agriculture is generally faster than the growth of the industrial sector, and these factors are usually combined with an rapid urbanization and internal migration which also confines employment opportunities for women. Development also increases schooling rates that delay women's participation to the labour market. Thereafter in the process of development the growth of service and industrial sectors generate new opportunities for female labour, therefore female LFPR raise consequently. This is called as U-shaped pattern for women: the relationship between industrilization and female participation rates, that has been found in cross national studies at different level of economic development (Durand, 1975; Psacharopoulos and Tzannatos, 1989; Presser and Kishor, 1991). According to World Bank study (1993) on Turkey this decline trend in female LFPR is consistent with the widely supported the U-shaped relationship between economic development and female participation rates which has been experienced in most of the OECD countries.

It must be mentioned that the U-shaped trend happens in different time periods in different countries depending on the countries social and economical backgrounds. In some countries the pattern appears after three or more decades, but in some countries it is observed in a very short period of 20 years. For example in the UK, the US, and Australia, this trend has been experienced over a short time, while it has been occurred over the long term in Greece, Portugal (Sorrentino, 1983). The historical and social background of female participation rates in Turkey suggests it is expected

to emerge in this decade, particularly if accompanied by policies and implications of encouraging female participation to labour market (World Bank, 1993).

As is seen in Table 3.9 there is a great disparity between the participation rate of rural and women area. In 1994 rural female participation rate was 43.7 percent compared with 16.2 percent in urban area. While 60 percent of Turkey's population live in urban areas about 77 percent of the female labour force live in rural areas. The higher participation of women in rural labour market is due to the nature of employment in rural areas where agriculture plays an important role and women are traditionally employed in these agricultural works. In addition not only do females LFPR differs by rural and urban areas but also age, education and marital patterns change considerably as well. OECD (1991) points out that Turkey is the fourth largest country in the OECD, but it has an uneven spatial distribution of population and economic activities. For instance there are huge discrepancies in schooling rates, fertility, employment opportunities, and traditional beliefs and attitudes. Therefore differences in labour market participation between rural-urban areas is very important to mention to outline the policy measures for women's employment. In the following sections the factors affecting of labour force participation of women, such as years of schooling, age and marital status, with dimension of rural-urban will be explained.

3.3.1 Female Participation Rate by Marital Status

The relationship between female participation and marital status which is demonstrated in Table 3.10 (see appendix 1), reveals that in the urban area single women and divorced women have much higher participation rates than married and widowed women. This outcome suggests that the main reason behind women's

participation in the labour market is financial need. As Citci (1982) points out, financial motivation is the most important factor in women's participation in urban area, thus divorced women, who are head of the household and need to support themselves and their family, have the highest LFPR. Whereas being married and also having children negatively affects the LFPR of women due to their childcare and housemaking chores which are thought to be married women's primary job. Single women's LFPR are likely to be higher than married's ones because they have not family obligations but lower than divorced women because financial need is not as important to them.

On the other hand urban male LFPR demonstrates different profiles; married men have the highest LFPR (81.4 percent, 1992) which divorced men have the second highest (63.0 percent, 1992), and widowed men have the lowest (21.6 percent, 1992) after single men (49.3 percent, 1992). All these figures support the idea of men is breadwinners and women are secondary (supplementary) labour force in Turkey.

When the rural area is considered the highest LFPRs are more uniform. As is noted earlier rural women chiefly work as an unpaid labour, therefore being married or single or divorced has not very much affect on their participation.

3.3.2 Female Participation Rate by Age Structure

The female and male labour force participation rates are also affected by age structure, which is shown in Table 3.11 (see appendix 1). The participation of rural women in the labour market is higher than their urban counterparts. The rural women workers age profiles between 1988 to 1992 displays the M, or twin peak pattern,

found in most OECD countries during the 1960s and 1970s but recently this M shape profiles have been replaced by bell shape patterns like males. The participation rate increases between teenage years and the early twenties, as women leave school and join the labour market, but it decreases during the ages of 24-34 because of marriage and childcare duties. Then it increases between age of 35 and 50, when children are grown up, and finally after age 50 it falls again. These trends are consistent with the observation that was pointed out earlier for rural females, whose LFPRs are higher, and marriage and childcare does not disturb them as much as it affects their urban counterparts.

The urban female profiles show different pattern: the LFPR of urban female rise steadily and reach a small peak at the age of 20-24 and begin to fall from this age category. This reflects the reluctance of employers to hire women with children.

The age profiles of urban and rural males shows the bell-shaped pattern as is usually observed in most of the OECD countries at a similar development stage (World Bank, 1993). The participation rate increase gradually through the twenties as they complete their education and reach a peak at 35-39 age category after that at the age of fifty stars to decrease sharply.

3.3.3 Labour Force Participation Rate by Educational Status

In this section, gender differences in education and its effect on labour force participation rate are examined. As we mentioned earlier there are great discrepancies in literacy rate and educational attainment between men and women (see Table 3.3 and 3.4). In spite of a significant drop in the rates of illiteracy for

females during the last three decades (67.5 percent in 1955 and 19 percent in 1992), one third of Turkish women are still illiterate (DGSPW, 1995). Whereas the male illiteracy rate is much lower than for females (10.2 % in 1990 and 31.0 % in 1990 respectively). The schooling rates for boys and girls in primary school, which is compulsory, are similar; these rates are 85.4 % for girls and 91.1 % for boys in the 1991-1992 academic year. But in secondary and higher education, female student's attainment falls sharply. For example 53.2 % of girls continued to the secondary school after finishing their primary school, on the other hand this rate was 72.8 % for boys (DGSPW, 1994).

The main reason for this inequality in the educational attainment is probably due to the social values which families impose as the education is a more important and profitable investment for boys than girls, who are expected to accept their role in the society based on gender as a wife or mother. Another explanation could be the fact that the opportunity costs of schooling for girls are thought more costly than boys. Traditionally it is believed that girls are expected to leave home when they get married however boys are responsible for the family even after they are married. In addition, in line with the expectations of female roles, sometimes older girls are responsible for housework, caring for younger sisters or brothers, therefore their time spent at school can be thought quite costly in the family. Since cultural values and traditional beliefs, which define women's role as motherhood and restrict their activity to the household chores women's lower level of education becomes inevitable in Turkish society.

Table 3.12 and 3.12a (see appendix 1) show the relationship between education and LFPRs in urban and rural areas respectively. As is seen from the Tables, LFPRs varies by educational attainments more among women than men. In other words, education seems to play a very important role in determining the female participation in labour market. As the World Bank (1993, p. 40) reports, many econometric studies of female labour supply in both developed and developing countries show that "schooling is a consistent and among the most effective determinants of female participation, but much less so of men". This effect is seen generally in two forms; as wages and work opportunities in labour market are determined by schooling educated women find it more attractive to work in labour market rather than remain in nonmarket, such as household activities. Secondly, because of the effectiveness of schooling "female labour supply, independent of influences through wages, by breaking down the noneconomic constraints related to the woman's (as well as her family's and society's) attitudes toward market work as opposed to housework" (World Bank, 1992, p.45).

The relationship between education and labour force participation is more apparent among urban women than rural women. The Table 3.12 demonstrates that the LFPR of women rises with their schooling, in other words education has a very strong effect on the female participation. The LFPR of women in 1992 was 7.2 percent for illiterates and 83.3 percent for university graduates. This indicates that urban women are more likely to join and take advantage of work opportunities with their increasing schooling than their rural counterparts.

The LFPRs of rural women varies according to their education level. The participation rate was found quite high among illiterate rural women (44.9 percent in 1992) which contrast with urban women. However the highest LFPR of rural women in 1992 was recorded among university and high school graduates (88.1 percent and 79.7 percent respectively), which shows that education with practical and defined skills seems to give women more power to enter labour force.

The relatively higher LFPRs of rural women at every level of schooling can be explained by the nature of the jobs, which they hold. Women are generally employed in agriculture, or work as unpaid family workers, in jobs where educational attainments are not required. On the other hand in urban areas, industrial and service sectors are prevalent which require relatively more education than agriculture. When females migrate from rural areas to urban areas with little or no-education and experience only in agricultural work, they cannot participate the labour force easily.

Nevertheless, in general Table 3.12 and 3.12a indicate that at every level of education, except the high level of education, women tend to have lower participation rates than men. Ozbay (1981, p.168) explains this may be "due to the limited job opportunities in the non-agricultural sector, finding a job is not only related to educational attainment but also to gender".

3.4 Employment status of Women in the Labour Market

The employment status of women, which is shown in Table 3.13, reflects social and traditional beliefs in Turkish society. According to the latest data, 62.6 percent of women as opposed to 12.6 percent of men were unpaid family workers in 1994.

Although there is a decline in this rate since 1970 (82.9 percent) still more than half of the women are engaged in agriculture as an unpaid family workers. The number of women working as employees are very low as well, although it increased from 10.2 percent in 1970 to 21.5 percent in 1994. The percentage of women working as self-employed was only 6.8 percent in 1970, and increased very little to 10.5 percent in 1994. On the other hand men's employment status are more evenly distributed for instance in 1994, these rates were 40 percent, 42.3 percent and 12 percent as self-employed, employee, and unpaid family workers respectively.

Table 3.13 The Distribution of Male and Female Labour Force by Employment Status

	1970		1985		1994	
Employment Status	male%	female%	male%	female%	male%	female%
Self-Employment	40.2	6.8	32.3	4.7	40.01	10.57
Employee	38.4	10.2	42.4	14.0	42.39	21.50
Unpaid worker	21.3	82.9	19.1	79.2	12.61	62.69
Unknown	0.0	0.0	6.2	2.0	5.0	5.25
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: For 1970-1985, World Bank, 1993, p.23, for 1994 SIS, Household Labour Force Survey,1994.
Note: The 'unknown' category presents first time job seekers.

Moreover, the World Bank (1993) shows, with their available data for 1990, that there were apparent discrepancies in employment status between urban and rural females and rural males and females. In urban areas, males and females employment status was quite similar to each other (see Table 3.13a in appendix 1). However in rural area the percentage of women working, as unpaid family workers were 86 percent compared with 10 percent in urban area. The number of rural women working as employees was recorded at only 6 percent, compared to 62 percent for urban women.

In urban area the female and male workforce shows a more equal distribution of employment status. In 1990, 65 percent and 62 percent for men and for women respectively. However, the percentage of women who were able to lead their own economic lives was only 8 percent compared to 26 percent for man in 1990 in urban area.

The urban and rural differentials in the gender distribution of employment status demonstrates that the social and economic structure of the Turkish Labour market is quite different between these areas. In rural areas, agriculture is the main activity for both male and females, but mainly women work in the farms as unpaid family workers. The changes of economic structure from agriculture to services and industrial sectors creates more work opportunities for men and women in urban area than rural area. Moreover the differences indicate that traditional and patriarchal beliefs and values are more prevalent in urban than in rural areas.

The relative employment status of men and women confirms that women are still accepted as homemakers and mothers rather than breadwinners. Only a minority of women is able to control their own economic lives. The majority of females is seem to be economic minority and generally economically depended on men.

3.5 Occupational Distribution and Gross Earnings Differentials

Tables 3.14 and 3.15 (see appendix 1) which present the industrial and occupational distribution of labour force in both rural and urban area respectively, reflect the structural changes in the Turkish economy, which is changing from an agricultural economy to industrial and service ones.

During the period from 1970 to 1990 the agricultural labour force decreased from 89.5 percent to 74.0 percent for females and from 54.1 percent to 34.3 percent for males. Meanwhile industry and services increased for both genders during the same period.

Table 3.14 demonstrates that women are seldom employed in mining, construction utilities, and transportation, which are seem as heavy industries. The Turkish Labour Law, which will be detailed in the next section, prohibits women employment in these industries because they are heavy works and not suitable for them. It should be noted that this idea of suitable work for women also influences the educational choice of young female children.

Women are generally employed in agriculture and manufacturing industry (especially food-beverages, textiles, tobacco, etc.,) which are assumed to be light jobs and more suitable for females. Industries where female workers are concentrated are generally labour intensive and low paying industries such as tobacco, textiles and agriculture while the heavy industries are capital intensive and high paying industries, such as mining, transportation, and construction.

Table 3.15 shows the occupational distribution of the labour force. Female workers were generally highly concentrated in agricultural work (74.1 % in 1990) compared to male counterparts (34.0 % in 1990). However their representation in clerical, sales and services and productional occupations has been increasing over the period 1970 to

1990. Although women are over represented in the professional jobs, they are under represented in managerial jobs where decision-making mechanism and power lies.

Most of the explanation for the persistent gender differentials in wages is due to the occupational segregation and women's employment in low –paying sectors (OECD, 1985; Anker, 1997). The gender differences in human capital and the cultural values and beliefs in the society can be related to the wage discrimination in the labour market as well. As we will show in the next Chapter, our econometric results show that generally 20 percent of the gender difference in wage can be explained by discrimination, while the remaining differences can be attributed to schooling, experience and occupational gender segregation.

The test of wage discrimination for 38 occupations in branch of activities for the year of 1994 reveals that women receive 27 percent lower wages than their male counterparts. As mentioned earlier these outcomes imply the importance of role of occupational segregation in wage discrimination in Turkey. In addition, the statistical analysis of gender wage gap in manufacturing subsectors indicates that women earnings are on average 20 to 40 percent less than men between 1982 and 1994.

3.6 Women in the Legal Environment

In this Section the legal system which affects women's position and reflects their rights in the labour market is examined within the framework of following laws: The Constitution, the Civil Code and the Labour Law. In addition, the relevant international conventions ratified by Turkish government are also addressed.

The Constitution

The 1982 Constitution names equality before the law and forbids discrimination on the basis of gender (Article 10). Article 50 of the constitution states that nobody can be required to perform work unsuited to his age, gender or capacity and women enjoy special protection regarding working conditions. This article may cause the practice of occupational segregation in workplace. On the other hand, according to the Article 70, no criteria other than qualification for the office concerned shall be taken into consideration for recruitment into the public services (World Bank, 1993).

The Civil Code

In spite of the principle of gender equality by the Constitution, there are some contradictory articles, which support the gender discrimination in the Civil Code. For example according to Article 152, the husband is the head of the conjugal unity and responsible for supporting his family, the wife is the homemaker. The strong feminists in Turkey think that the idea of a household head, which is not valid in the modern society, is obviously against the principle of gender equality (Kandiyoti, 1989; Tekeli, 1995).

Article 153 specifies that a woman is required to carry her husbands' surname and that the wife's place of residence is at her husband's place of residence. This Article constrains women's work opportunities and promotions in the labour market. In addition, the Article of 159, which required that a wife obtain her husband's

permission to perform any type of paid work, was cancelled by the Constitutional Court on the basis of unconstitutionally in November 1990 (Suzek, 1990; DGSPW, 1994). As is seen from the Turkish Civil Code, the family is still based on the idea of traditional family and cultural and traditional norms are still prevalent in Turkey.

Educational Laws

The Constitution specifies that no one can be deprived of the right to learning and education. Primary education is compulsory for all citizens and is free of charge in the State schools. Primary education covers children from the age of 6 to 14.

The duration of compulsory primary school was extended to eight years in the 1989 but it has not been practised until the year of 1998. As education is the main policy tool for improving women's position in labour market, this extension of compulsory education to eight years is a very important step for the future, because human capital endowments is an important determinant of wages and occupational status.

The Labour Law

The Labour Law which was first enacted in 1971 and amended in 1983, covers only employed people in the paid labour market. Two types of regulations with regard to workers in the labour legislation are examined in this Section. Firstly the shortcomings of regulations, which affect both genders and secondly the regulations which consists of only female-specific provisions.

The major drawback of Turkish Law is that it does not cover workers in the agricultural sector nor people working in the informal sector such as domestic and homebased workers, who are generally women. Also the Law does not provide job

security for workers excepting trade union representatives. As is pointed out in Section 3.2.1, the dismissal of workers is absolute right of employers who can lay-off their workers for any reasons according to the Article 13.

As far as trade unionism is concerned, there are some Articles in the Constitution and Trade Union Law, which restrict and forbid the trade union activity of workers. For instance, according to Article 52 of the 1982 Constitution, trade unions are banned from engaging in any political activity. Any form of cooperation with, or affiliation to a political party or any association is prohibited. Unions are also financially controlled by the government. In this way the government can restrict the ways in which unions can spend their money. The Trade Union Law of 1983 also has political restrictions; Article 37 states that unions cannot undertake any political activities or any associations and occupational organizations. Also they are only permitted to affiliate with international union organizations with prior approval of the government (Shabon and Zeytinoglu, 1985). Therefore in Turkey, although there is a high rate of unionisation in the public sector (116.2 percent for males and 62.24 percent for females in 1994), they are restricted in their activities to help their workers. Among workers employed in the private sector, the unionisation rate is 65.2 percent for male and 33.4 percent for females, in 1994. They generally avoid using their trade union rights for fear of losing their jobs, because, as mentioned earlier, dismissal of workers is very easy and supported by the Law in Turkey (DGSPW, 1996). Turkish Labour Law is an employer-friendly law.

There are also some female specific discriminatory articles in the Labour Law. For instance, Article 81 states that establishments employing more than 100 or 150

women should have nursing rooms and those employing more than 150 should provide nurseries. But in practice, the employers keep the number of their women workers below these limits and consequently this restrains the women's work opportunities.

Women are entitled to a paid maternity leave of six weeks before and six weeks after confinement. These periods can be extended to 6 months depending on women's request but during these period they cannot receive any payment. The paid maternity leave is covered by social insurance system, funded by contributions from workers, employers and state.

All types of underground and underwater work are banned for women of all ages (the Article 68 of Labour Law). This article reflects the general concept of separation the women's and men's work in society. According to the Article 69, women are also forbidden from night work, which is described as the period consisting of at generally between 10:00 p.m. and at the earliest 6:00 a.m. in industry, with the exception of occupations in accordance with the Regulation prepared by the Ministries of Labour, Industry and Commerce. Women over age of 18 can be employed in industrial work of a continuous nature that requires skilful handling and speed, but is not physically strenuous. The Article 6 lists the following activities, which are accounted to be 'industrial', and women are banned from these works:

a) Work of all kinds in the exploration and extraction of minerals from the earth, and work in stone, sand and lime quarries and the like,

b) Industries in which raw materials or partly manufactured or finished goods are processed, cleaned, altered, ornamented or prepared for sale,

c) All operations involved the erection, repairing, dismantling and wrecking of plant, facilities or equipment,

d) The construction, repair, alteration and demolition of building and all industrial activities connected therewith,

e) The construction and repair of roads, railways, harbours, canals, tunnels, underwater salvage and the drainage of swamps,

f) The generation, transformation, and transmission of electricity and motive power of all kinds and operations,

g) The construction and operation of gas works and water works,

h) Telephone, telegraph, radio and television installations,

i) The building, repairing, alteration and breaking up of ships,

j) The transportation of passengers, goods and animals by land, air or water, and loading, unloading and handling of goods at railway stations, warehouses, harbours, quays and airport,

k) Printing operations (World Bank, 1993, pp.101-102).

As is seen from the legal framework although Turkish legal system is gender neutral, there are some regulations, which support and encourage discrimination and occupational segregation in labour market.

International Conventions

Turkey ratified the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in December 1985. The Convention was adopted by the United Nations General Assembly in 1979, and went into effect in 1981 (DGSPW,1993). The Convention describes discrimination against women as "any distinction, exclusion or restriction made on the basis of sex which has the effect or

purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on the basis of equality of men and women, of human rights and fundamental in the political, economic, social, cultural, civil or any other field" (World Bank, 1993, p.94).

Upon ratifying CEDAW, Turkey made reservations in respect of specific articles which are in conflict with the Civil Code. The Articles specifying that the husband is the head of family and that he chooses the place of residence and is responsible for the economic support of the family are the major issues which were not signed.

Although CEDAW was endorsed (with reservations) there have been no positive steps to implement the convention so far. There are still contradictory Articles and implications in Turkish legal system with CEDAW. For example, although CEDAW forbids dismissals on the grounds of pregnancy or maternity leave, as is mentioned earlier, according to Turkish Labour Law employers can discharge women workers because of pregnancy and child birth. The Convention specifies the right to family benefits, but in Turkey, when both spouses are employed, only the husband is entitled to the family and birth benefits (Berik, 1990).

ILO (International Labour Organisation) Conventions

Turkey has ratified several conventions regarding working women: they are listed as follows; Convention No.45: bans employment of women in underground works in any time, which also valid in Turkish Labour Law. Convention No.100: declares the principle of 'equal pay for work of equal value' and convention No.111 forbids occupational and employment discrimination, and states that the government agencies should apply non-discriminatory employment policies in all their activities. However,

as the World Bank (1993) points out "Turkey has been criticized on several occasions by the ILO for not meeting the requirement of the Conventions. ... To date, Turkey made limited progress in implementing the international labour conventions relating to women" (p.96).

European Social Charter

In 1989 Turkey ratified the European Social Charter, which is very important in gaining acceptance into the European Union. Turkey once again put a reservation on numerous articles, such as Article 8, on the right of women to employment protection. However progress in agreement with the Charter, which requires far-reaching labour recommendations, is very important for Turkey is goal of membership.

The legal framework is very important for the improvement of female workers' conditions and the prevention of discrimination. Although the Turkish legal system declares the equality on the basis of gender, it relaxes some regulations, which perpetuate and encourage discrimination and occupational segregation in the society and in the labour market (the Civil Code, the Labour Law).

3.7 The Government and NGOs role in Women's Issues

Mustafa Kemal Ataturk reformed the legal system in the early 1920s. These far-reaching reforms helped women to enter labour market and professions and provided equal treatment of women under the Law until the mid 1940s. During these years women's issues was not separated from the general development process, these

gender neutral policies and reforms were not sufficient for the majority of women and their position did not change a lot.

After several decades, due to the rise of feminist and Islamic fundamentalist movements, women's role in Turkey became a major issue once again in the mid 1980s. These two movements drove the debate over women issues and rights into the attention of public discussion in diametrically opposed ways. In the Islamic fundamentalist movements women's role in the family as a mother or wife is addressed while the debate publicly was over women's right to wear headscarves in educational institutions and government offices. In addition some Islamic groups proposed to segregate men and women in public life, including schools and hospitals. On the other hand the feminist movements highlighted the acts of physical violence against women, women rights and the articles of the Civil and Criminal Codes that discriminate against women. While the feminist movement remained an informally organised and apolitical, Islamic movement, through the influence of the conservative ruling party, it held influence until early the 1990s in Turkey (Berik, 1990).

3.7.1 The Government's Role in Women Development

After 1985 the government took action to address women's issues. This action was in conformity with both international resolutions and the targets and policies of the Sixth Five-Year Development Plan, and included the establishment of a Government Directorate to address women's issue. As a first step in 1985 the CEDAW was signed and in 1989 the European Social Charter of the EU also ratified. Berik (1990) claims that these ratifications of CEDAW and European Social Charter were "a defensive move on the part of the Turkish government, which was responding to the heightened

international and domestic debate over women's issue and rights ushered in by the United Nations decade for women. ... In acceding to CEDAW and demonstrating its commitment to the improvement of women's status, the government's primary aim was to bolster its bid for membership in the EC" (Berik, 1990, pp.82-83).

In 1989, the Family Research Institute (FRI) under the Prime Minister was established in response to conservative pressure. The aim of the FRI is the preservation and strengthening of the Turkish family which was seen as under threat from social and economic development, (World Bank, 1993, p.79). The General Directorate on the Status and Problems of Women (DGSPW) was established within the Ministry of Labour and Social Security in 1990. In 1991, the General Directorate became attached to the Prime Minister's Department and continued its functions under the Ministry of State responsible for Women's Affairs and social Services. In 1993, it became incorporated into the newly created Undersecretariat for Women's Affairs and Social Services. The major aims of DGSPW are as follows; improving the educational level of Turkish women, increasing their employment in productive sectors, thereby strengthening their economic independence, and certifying the legal, health and social rights of women. Also it promotes the equality of women in the social, economic and political fields. However, the General Directorate is designed as the main national service unit within the Undersecretariat and performs its obligations with a limited budget and personnel. For example the number of staff was only 5 in 1991, increasing to 42 in 1994. The General Directorate's share from the national budget was 0.001 percent in 1994, increasing to 0.002 percent in 1994 (DGSPW, 1994, p.10). Therefore these budgetary problems limit their activities and handicap them in playing a considerable role in bettering the status of women in Turkey.

Universities have opened centres and programmes to contribute to the improvement of women's studies through seminars, research, etc. during the 1990s. The first one was the University of Istanbul, started in 1990, and followed by the University of Ankara in 1993 and Middle East Technical University in 1994.

3.7.2 Non-Governmental Organisations

At the very beginning of 20th century, there were several active and eloquent women's group such as, the Ottoman Association of Women's Rights, The Turkish Women's Organisation and Red-White, aiming to take necessary actions for elimination of discrimination in the Law, economic and social life and the family (Tekeli, 1992).

In the early 1920s, with Kemalist reforms, Turkish women's rights were granted and they were encouraged to enter professions with gender neutral policies. It was thought that there is no more need for women's organisation in Turkey, therefore women's group became less active until the 1980s. The 1982 Constitution restrains the association of women or youths. As is mentioned by the World Bank (1993) women's groups started to became progressively active at the middle of the 1980s, "in part as a result of the austerity measures of the early 1980s, but also as a result of the resurgence of conservatism within Turkey and the focus on women's issues internationally" (World Bank, 1993, p.81).

Currently, there are 211 associations and organizations, which are specially oriented towards women's issues. These are generally professional, cultural or charitable

organisations located in metropolitan cities such as Ankara and Istanbul. Although the organisations try to maintain regional offices, they cannot provide benefits to women throughout Turkey.

As mentioned earlier, feminism has a long history in Turkey (since late nineteenth-century Ottoman society) which may be anaysed in three stages. The first stage feminist movement questioned the status of women in Ottoman society by opposing women's traditional role as wives and mothers, and struggled to loosen traditional beliefs and values by supporting the right to education and suffrage for women, and to work and participate in public life (Tekeli, 1995; Grunell and Voeten, 1997). The reforms, were made by Kemal Ataturk as part of the modernisation program and also gave to women rights like suffrage and equal education. According to the feminist Kandiyoti (1989:145), these reforms saw formal freedom as an inherent part of modernisation, and used women, as symbolic pawns.

The second stage of feminism began to criticise Kemal Ataturk's reforms which provided certain rights for women, but at the same time made them dependent on men through the Civil Code; for example the husband was head of and controlled family, place of residence. Arat (1994) criticise this as "Treating women as symbols and as tools of modernisation and westernisation, rather than as equal and full partners of men, the Kemalist reforms intended to achieve little in changing women's lot..." (Arat, 1994, p.72). Also Tekeli support this criticism of the restrictions in Ataturk's feminism and she calls it state feminism (Tekeli, 1992).

The third stage of feminism started in the 1980s when all political activities and associations were banned after the Military Coup in 1980. At this time the new

feminist movement became a very important civil and democratic force in Turkey. The first public event was a symposium organised by small feminist group in Istanbul in 1982. Tekeli found it very important because "feminism as a concept was discussed here for the first time since the turn of the century" (Tekeli, 1995, p.14). Later on they launched lots of campaigns, such as the petition to put pressure on the government to comply with the United Nations Convention of Nondiscrimination against Women (CEDAW), which passed through parliament in 1985. Also the purple needle campaign against sexual harassment in the street and at the workplace, the campaign to raise public awareness of domestic violence against women. After 1989, they concentrated on establishing shelters for battered women and also other initiatives for new skills such as organisations, management's (Tekeli, 1992; 1995; Grunell and Vooten, 1997). Moreover, Sirin Tekeli who is professor in philosophy and well-known feminist in Turkey founded the Women's Library and Information Center Foundation in Istanbul in 1990. This centre performs the function of collecting all research material, newspapers, articles, documents related to women's issues.

3.8 Conclusion

In this Chapter, the position of women in the Turkish labour market has been examined with special emphasis on the difference between women and men in both rural and urban areas. It has been seen that there are huge rural-urban variations among men and women. Also there are differences in the educational level, LFPRs, and unemployment level of Turkish women. These differences between two regions are vital in making suitable suggestions for policy for women in Turkey.

Some of the major points of this Chapter are as follows: Women constitute nearly 30 percent of the labour force in 1994: 43.7 percent of whom dwell in rural areas compared to 16.2 percent who dwell in urban areas. The female labour force participation has been decreased from 72 percent in 1955 to 29.4 percent in 1994. This declining pattern is consistent with the widely known U-shaped relationship between economic development and female participation rates, which has been found in most of the OECD countries. The highest LFPRs in urban area are for divorced women, on the other hand in rural areas married and single women tend to have highest LFPRs. Young-single urban women tend to have high rates of unemployment. In the rural areas unemployment is seem more as a problem for women who have higher educational attainment than others. The positive relationship between education and LFPRs is clearer among urban women than rural women. The LFPRs by age profiles of rural women shows an 'M' shape pattern, however, age-participation profiles of urban women peak at the age of the 20-24 category and declines from there on.

About 62 percent of women work as unpaid family workers compared to 12.6 percent of men, and in rural areas this rate goes up to 86 percent by 1994. Women were generally engaged in agriculture: 74 percent in 1990. They were underrepresented in industry and services. Although women contribute substantially both in labour and non-labour market, their output is not fully acknowledged. There are number of reasons accounting for this: their role in the labour market; their statistical invisibility; and the lack of knowledge as to women's role. For example, in the rural areas, majority of employed women work in agricultural sector and is unpaid. Likewise, in the urban areas, the female participation rate is low (16.2 percent in 1994), although

this understates women's participation since the official labour statistics do not completely reflect women in the informal sector, such as domestic and homebased workers. The statistical invisibility reflects a number of factors, namely, underreporting of women's work by male proxy respondents, as well as by women themselves, the overlap between women's market work and housework. The lack of research into women's role in informal sector, such as domestic service, has also contributed to the failure to fully recognize women's contribution (World Bank, 1993).

The legal framework shows that, although the Constitution is gender neutral, gender segregation and wage discrimination are incorporated in the Civil Code and the Labour Law in Turkey. According to the traditional and social values and beliefs women's main role is as a wife and mother, and men are thought of as the breadwinners. Discriminatory beliefs and norms and the Law related to women play a very important role in the inferior position the Turkish women in the society. As pointed out in feminist theories of discrimination in Chapter 2, the subordinate position of Turkish women in the labour market at home are interrelated, and those social and traditional cultural attitudes are responsible. Economic and social variables interact with each other to create gender segregation and wage discrimination in the Turkish labour market. In sum, it appears that the non-neoclassical models are more relevant than the neoclassical models for explaining gender discrimination in Turkey where traditional cultural beliefs and norms are still prevalent.

3.9 Appendix 1: Tables

Table 3.1 Women Members of the Parliament by Selected Election Years

Years	Total Members	Female Members	(%)
1935-1939	395	18	4.56
1950-1954	487	3	0.62
1965-1969	450	8	1.78
1973-1977	450	6	1.33
1983-1987	399	12	3.01
1991-	450	8	1.78

Source: DGSPW, 1993, p.31.

Table 3.2 The Percentage Illiteracy rate by Gender in Turkey

	1980 (%)	1985 (%)	1990 (%)
Total	40.35	22.23	19.25
Female	56.25	33.15	29.20
Male	23.53	11.47	9.45

Source: SIS, 1994, Temel Kadin Gostergeleri, 1978-1993, p.25.

Table 3.3 Literacy and Education of Population by Gender and Region in 1990 (%)
(6 Years and Over)

		REGION				
Schooling Level	Total	West	South	Center	North	East
	Female					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Illiterate	28.03	19.13	27.31	23.53	30.28	48.35
No Schooling	15.52	14.50	16.21	15.47	16.71	16.19
Primary School	43.18	48.10	43.68	47.32	43.45	28.98
Junior High School	5.45	7.31	5.33	5.43	4.27	3.00
High School	5.96	8.26	5.85	6.16	4.25	2.79
Higher Education	1.85	2.72	1.63	2.09	1.04	0.68
	Male					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Illiterate	11.19	7.19	10.72	9.13	11.98	20.86
No Schooling	16.30	13.97	16.53	15.92	17.93	19.94
Primary School	49.11	52.20	51.23	49.42	49.44	41.39
Junior High School	9.63	10.59	8.62	10.27	9.06	7.96
High School	9.54	10.76	8.76	10.45	8.45	7.42
Higher Education	4.22	5.29	3.83	4.81	3.14	2.43

Source: DGSPW, 1994, p.63.

Table 3.4 Total Fertility Rate by Region

Region	1983	1988
West	2.68	3.52
South	4.59	4.47
Center	4.01	4.14
North	3.88	3.55
East	6.52	4.99
Urban	3.17	3.79
Rural	5.08	4.37

Source: World Bank, 1993, p.115

Table 3.5 Distribution of Gross Domestic Product (%)

Agriculture		Industry		Manufacturing		Services	
1970	1993	1970	1993	1970	1993	1970	1993
30 %	15%	27%	30%	17%	19%	43%	55%

Source: World Bank, 1995, p.163

Table 3.6 Weekly Hours of Work in Main Job for Employed in Total, 1990

Age Group	Males '000	Hours	Females '000	Hours
12-14	360.1	48.8	302.7	42.1
15-19	1417.7	49.9	1008.8	43.1
20-24	1296.8	50.4	763.1	44.2
25-29	1796.8	51.2	642.3	43.9
30-34	1698.2	50.1	614.6	42.4
35-39	1640.3	50.5	587.2	43.5
40-44	1222.1	49.4	459.4	43.1
45-49	939.1	50.4	398.5	42.0
50-54	822.7	49.2	372.9	41.6
55-59	674.8	49.2	329.5	43.2
60-64	464.8	49.1	188.7	40.5
65+	376.7	44.0	106.5	37.0
All Ages	12710.1	49.9	5774.1	42.9

Source: SIS, 1990, Household Labour Force Survey

Table 3.6a Weekly Hours of Work in Main Job for Employed in Urban 1990

Age Group	Males '000	Hours	Females '000	Hours
12-14	124.0	53.2	31.6	44.8
15-19	628.6	52.3	125.5	45.9
20-24	623.9	50.1	177.2	45.1
25-29	1003.9	51.7	163.5	43.6
30-34	976.8	49.9	170.9	41.3
35-39	929.3	50.5	164.2	40.6
40-44	715.9	48.6	106.9	39.6
45-49	471.1	50.0	44.1	42.0
50-54	336.7	51.2	27.5	41.4
55-59	214.9	51.1	15.8	47.2
60-64	101.8	52.2	9.1	49.2
65+	73.5	49.5	5.4	50.3
All Ages	6200.4	50.6	1041.7	42.9

Source: SIS, Household Labour Force Survey, 1990

Table 3.6c Weekly Hours of Work in Main Job for Employed in Rural 1990

Age Group	Males '000	Hours	Females '000	Hours
12-14	236.1	46.5	271.1	41.8
15-19	789.2	47.9	883.3	42.7
20-24	672.9	50.7	585.9	44.0
25-29	792.9	50.5	478.8	43.9
30-34	721.4	50.3	443.7	42.8
35-39	711.0	50.5	423.0	44.7
40-44	506.2	50.5	352.5	44.1
45-49	468.0	50.7	354.4	42.0
50-54	486.0	48.4	345.4	41.6
55-59	459.9	48.2	313.7	43.0
60-64	363.0	48.2	179.6	40.0
65+	303.2	42.7	101.1	36.3
All Ages	6509.7	49.2	4732.4	42.9

Source: SIS, Household Labour Force Survey, 1990

Table 3.10 Labour Force Participation Rates by Gender and Marital Status

	1988		1992	
Marital Status	Female (%)	Male (%)	Female (%)	Male (%)
URBAN				
Never Married	25.7	54.7	23.5	49.3
Married	13.4	83.9	13.2	81.4
Divorced	35.8	73.7	50.0	63.0
Widow	9.1	19.5	6.4	21.6
RURAL				
Never Married	56.3	67.2	52.6	62.9
Married	53.2	89.1	52.0	86.0
Divorced	51.0	89.5	41.5	59.8
Widow	23.7	36.6	25.0	38.2

Source: SIS, 1988; 1992, Household Labour Force Survey

Table 3.11 Labour Force Participation Rates by Gender and Age Groups

	1988		1992	
Age	Female (%)	Male (%)	Female (%)	Male (%)
URBAN				
Total	16.9	72.9	16.1	69.2
12-14	6.2	21.2	6.1	14.0
15-19	21.8	56.0	17.6	46.7
20-24	26.6	83.8	26.7	81.5
25-29	21.7	98.2	22.8	97.6
30-34	22.3	98.8	23.9	98.6
35-39	18.6	98.5	18.1	97.9
40-44	16.9	95.1	16.3	95.1
45-49	11.4	85.0	11.6	84.7
50-54	9.6	72.9	8.5	66.3
55-59	6.2	56.1	4.6	51.9
60-64	3.7	39.7	2.4	31.9
65 +	1.5	17.4	1.7	16.0
RURAL				
Total	51.8	80.4	50.2	76.6
12-14	40.9	39.4	36.8	33.0
15-19	59.9	73.2	55.0	65.1
20-24	58.8	91.5	58.8	93.6
25-29	55.2	97.4	48.7	94.8
30-34	57.3	98.2	52.3	98.7
35-39	60.7	98.4	62.4	96.9
40-44	57.1	96.6	62.0	94.3
45-49	59.0	94.1	64.1	92.6
50-54	55.6	91.8	55.1	89.2
55-59	47.0	82.8	50.1	82.6
60-64	32.8	74.5	34.3	68.6
65 +	16.9	43.7	15.8	39.3

Source: SIS, 1988; 1992, Household Labour Force Survey

Table 3.12 Labour Force Participation by Educational Status and Gender in Urban Areas

	1988 (%)		1990 (%)		1992 (%)	
	Female	Male	Female	Male	Female	Male
Illiterate	8.9	62.7	6.5	57.3	7.2	52.2
Lit.without any diploma	10.0	62.6	8.2	49.8	10.7	49.5
Primary school	12.9	77.1	13.7	76.3	11.4	73.0
Secondary School	15.1	56.8	13.7	58.1	13.0	53.6
Vocational Junior high school	16.0	51.0	14.9	46.7	10.2	51.0
High School	44.3	74.2	42.5	76.6	37.9	74.6
Vocational High school	50.3	82.3	50.3	80.7	49.0	78.6
Universities & other higher education	81.6	87.6	79.7	90.5	83.3	89.1

Source: SIS, 1994, Temel Kadin Gostergeleri 1978-1993 , p.56

Table 3.12a Labour Force Participation Rate by Educational Status and Gender in Rural Areas

	1988 (%)		1990 (%)		1992 (%)	
	Female	Male	Female	Male	Female	Male
Illiterate	49.3	73.9	50.8	67.2	44.9	64.5
Lit.without any diploma	49.1	75.7	58.0	72.9	46.2	59.3
Primary school	55.4	84.9	55.4	83.0	55.4	83.4
Secondary school	28.8	65.0	28.9	62.5	27.4	53.9
Vocational Junior high school	20.0	44.7	21.3	52.2	19.6	62.7
High School	51.9	80.0	58.4	89.3	46.0	83.3
Vocational High school	65.9	84.4	67.5	82.2	79.7	83.3
Universities & other higher education	89.4	96.5	89.1	96.9	88.1	98.0

Source: SIS, 1994, Temel Kadin Gostergeleri 1978-1993, p.57

Table 3.13a The Distribution of Male and Female Labour Force by Economic Status and by Urban-Rural in 1990

Economic	Rural		Urban	
Status	Male (%)	Female(%)	Male(%)	Female(%)
Unpaid workers	24	86	4	10
Employee	25	6	65	62
Self-Employee	45	5	18	7
Employer	2	0	8	1

Source: World Bank, 1993, p.34

Table 3.14 Distribution of Male and Female Labour Force by Industrial Sector in Total

	1970		1990	
Economic Sector	Female (%)	Male	Female (%)	Male
Total	100.0	100.0	100.0	100.0
Agriculture	89.5	54.1	74.0	34.3
Mining	0.1	1.1	0.0	1.3
Manufacturing	5.0	10.7	6.7	15.4
Utilities	0.0	0.1	0.0	0.3
Construction	0.2	4.5	0.2	6.9
Trade	0.5	6.9	2.2	14.2
Transportation	0.3	3.7	0.5	5.5
Business	0.5	1.2	1.7	2.1
Services	3.1	14.8	7.4	16.1
Unknown	0.9	2.7	7.1	4.0

Source: World Bank, 1993, p.25

Table 3.15 Distribution of Male and Female Labour Force by Occupational Groups in Total

Occupational	1970		1990	
Groups	Female (%)	Male(%)	Female %	Male %
Total	100.0	100.0	100.0	100.0
Professional	2.4	4.5	5.1	5.9
Managerial	0.1	0.9	0.2	2.2
Clerical	1.3	2.9	6.5	4.8
Sales	0.3	4.8	1.7	10.1
Service	0.8	5.5	3.0	10.5
Agricultural	88.6	53.2	74.1	34.0
Production	4.5	11.9	8.1	31.9
Unknown	2.0	16.4	0.4	0.8

Source: For 1970 World Bank, 1993 and For 1990 SIS, 1992, Household Labour Force Survey Results

CHAPTER 4

EMPIRICAL ESTIMATION OF THE EXTENT OF WAGE DISCRIMINATION IN THE TURKISH LABOUR MARKET

4.1 Introduction

It has been indicated in Chapter 2 of the present study that studies of gender discrimination in the labour market have been very popular during the last three decades. According to Dex and Sloane (1988) computer searches on the topic of the economics of discrimination can produce more than one thousand references dating from the early 1970s for North American and British sources alone. Since most of these studies originated and were tested using mostly the human capital framework for developed countries like the UK, the USA, and Austria, etc., it is of importance to investigate the scope of these theories for a developing country like Turkey.

Gender discrimination in Turkey has been conventionally studied by sociologists and little attention has been paid to analyzing discrimination within the labour market by economists. Econometric analysis of wage discrimination between male and female workers in Turkey has not been made by any economists so far. The World Bank reports that there are numerous such studies for various developing countries and at least one econometric study of female labour supply for each OECD country, excepting Turkey and Portugal (World Bank, 1993, p. 44).

In this thesis, firstly, the statistical analysis of the female-male wage differences in Turkey for twenty different industries within manufacturing sector between 1982-1994 will be examined. Secondly, we will investigate wage discrimination in occupations by applying econometric methods in the Turkish labour market. Wage discrimination will be tested using cross-section analysis for thirty-eight different occupations in the following branches of economic activity – mining and quarrying, electricity, manufacturing, gas and water sectors, for the year of 1994 in general. In addition, wage discrimination for thirty-eight different occupations in manufacturing sector will be examined using cross-section analysis for the year of 1994 in particular.

The statistical analysis of the gender wage gap in manufacturing sub-sectors between 1982-1994 indicates that there are large pay differentials between female and male workers in the Turkish labour market (see Table 4.1). The mean of male and female average daily wages in different sub-sectors of the manufacturing industry between the year of 1982-1994 are calculated from the year Book of Labour Statistics published by ILO.

As is seen from Table 4.1, there are substantial wage differences between the male and female workers, with women earning on average 20 to 40 % less than men. Wage discrepancies between the male and female workers in these manufacturing sub-sectors can be thought of as the outcome of two possible causes: occupational segregation within industries, perhaps arising from employment discrimination, and unequal pay within the same occupation, perhaps reflecting wage discrimination.

Table 4.1 The Means of Female and Male Daily Wages in Manufacturing Sub-sectors Between 1982 - 1994 (in Turkish Lira*)

Industrial Sub-sectors	Female	Male	Ratio F/M
Food	35387.69	46566.34	0.75
Beverage	45959.6	50746.6	0.90
Tobacco	51112.23	59079.19	0.86
Textiles	37535.50	41038.96	0.91
Garments	31940	33891	0.94
Leather	31397.42	31904.88	0.98
Wood products	32300.84	36926.87	0.87
Furniture	37891.85	35246.26	1.07
Paper	37350	47524.03	0.78
Printing, publishing	39216.96	39898.5	0.98
Chemicals	46482.19	53956.72	0.86
Petroleum -Coal	16007.9	59903.4	0.26
Plastics	37454.26	44632.79	0.77
Non-metallic minerals	40287.6	44793.2	0.89
Metals	47241.76	53963.60	0.87
Fabricated metals	37181.59	39990.6	0.92
Machinery	39564.4	42509.11	0.93
Electrical machinery	43115.84	46335.8	0.93
Transportation	45195.115	48128.2	0.93
Other manufacturing	34897.84	36786.3	0.94

Source: Computed from: ILO, The Yearbook of Statistics, (51st issue 1992, p.864 and 55th issue 1996, p.800).

* = Wages are daily earnings in Turkish Lira (TL) and the exchange rate was £ 1.00 for 4669.75 TL (in 1990 average) (The Turkish Central Bank, 1991).

Table 4.2 Distribution of Employed Population by Manufacturing Sectors and by Gender, 1975 – 1980 - 1985

	1975		1980		1985	
Manufacturing sectors	Male	Female	Male	Female	Male	Female
Food, Beverages, tobacco	14.1	12.0	17.0	17.7	16.0	13.5
Textiles, leather, Apparel	22.6	63.1	22.8	63.1	25.7	66.4
Wood products, Furniture,	14.5	1.5	13.2	1.9	12.9	1.9
Paper, Printing, Publishing	3.1	2.7	2.9	1.3	3.2	1.8
Chemicals, Petroleum	4.1	3.4	6.0	4.1	5.8	3.9
Non-metallic products	4.2	1.8	6.0	2.7	5.5	2.6
Metals	5.9	1.6	6.1	0.9	5.1	0.8
Fabricated Metal, Machinery	22.6	6.2	22.0	5.6	23.0	7.2

Source Note: (SIS), Population Censuses. Economic activity age is 12 and over.

Women receive the lowest relative pay in food, which is female-dominated sector (see Table 4.2), and also in petroleum, paper, and plastics. However, women earn relatively high wages in furniture, printing and fabricated metals, which are male dominated sectors. Table 4.2 shows how women and men are segregated into different industries. According to the recent data, women are generally employed in textiles and food industries (approximately 66 percent and 14 percent, respectively). However, women are under-represented in machinery and equipment and furniture, which are generally high paying male jobs.

This is consistent with the explanation that women generally earn less than men because they segregated into different industries and occupations (Gunderson, 1985; Willborn, 1986; Reskin and Padavic, 1994). Millward and Woodland (1995) explain

that the main consequence of segregation is that women and men do not compete in the same labour market therefore their wages are subject to different supply and demand forces in the labour market. On the supply side, gender segregation may reduce the wage of female jobs through the effect of overcrowding women into a small number of occupations and industries. When women have limited job opportunities they are in over supply in the traditional female occupations and industries, and this overcrowding reduce women's productivity and wages in these industries (Bergmann, 1986). On the demand side, the employers' discriminatory attitude towards females can reduce women wages by assigning them to lower paying traditionally feminine jobs and on the other hand, employing men in the high paying jobs.

As Ecevit (1991) points out, women are concentrated in a limited number of manufacturing sub-sectors reflecting perceptions as to the gender suitability of certain jobs. Also, in Turkey, males are thought to be suited to jobs requiring technical skills and physical strength but women are considered to be suited to routine jobs, requiring accuracy. Moreover, it is believed that women are likely to be patient, and these characteristics are thought to be essential for certain occupations. Therefore these beliefs about differences between the gender contribute to the gender segregation and women end up in the low paying jobs.

Table 4.3 shows that there are generally wage discrepancies between men and women during the period of 1982 to 1994. We see that the female / male ratio fell during the period 1982 to 1990 and subsequently rose to 1994.

Table 4.3 Mean Daily Wages of Manufacturing Workers in Turkish Lira

Years	Female	Male	Ratio (F/M)
1982	688.3	709.3	0.97
1984	1288.75	1355.2	0.95
1986	4999.050	4082.92	0.81
1988	6877.25	8642.9	0.79
1990	25296.75	31231.1	0.80
1993	128170.75	138746.1	0.92
1994	184931.80	191858	0.96

Source: Computed from: ILO, The Yearbook of Statistics, (51st issue 1992, p.864 and 55th issue 1996, p.800).

The gender gap in wages appeared to be widened after the beginning of 1980s as shown from Table 4.3, the female–male wage ratio declined from 0.97 in 1982 to 0.79 in 1988. However, in the early 1990s, the wage ratio appeared to be improved from 0.80 in 1990 to 0.96 in 1994.

As is mentioned in the previous Chapter, after the military coup in 1980, the Junta's new 1982 Constitution explicitly guaranteed the equality of men and women (Article 10) and forbade discrimination based on gender. In spite of the new Constitution there were wage discrepancies between male and female during the 1980s. In the early 1980s, wage discrepancies had been lower between men and women (see Table 4.3).

The fall after 1982 could be explained by the fact that in 1983 a new political party came to power (the Motherland Party) and ultra-liberal economic policies were pursued so that Turkey's industrialization strategy changed from one of import-substitution to export-orientation. Also some policies were put into effect to increase the export of industrial goods, such as depreciating the Lira and reduced real wages. At the beginning, there was a significant increase in the production of industrial goods, but this increase resulted from increasing capacity utilization, rather than new capital constructions. It was seen that the ultra-liberal policies such as privatisation, external competition and export-oritented production did not work in Turkey, and there was a recession in economy with both rising unemployment and inflation rates after mid 1980s (Tekeli, 1995). Accordingly, manufacturing industry, among others, reduced production due to a decline in market sales, consequently employers reduced the number of shifts worked, and dismissed workers.

As Ecevit (1995) argues: "Stagnation and decline in industry have direct consequences for women's employment. These effects are all the more pronounced in the case of industrial sectors with a high concentration of women that are particularly affected by the crisis. ...dismissals target unskilled workers who are easily replaced, rather than skilled workers and those employed in key positions. As women are generally likely to be of the former group they are more likely to lose their job" (p.84). This would be reinforced by the belief that men are 'breadwinners' in Turkey. This economic contraction fell relatively hard on women, and therefore affected their relative employment and pay levels. Women preferred to work for lower pay than men instead of being unemployed. During these years (1983-1990),

women's issues and particularly the employment of women received little consideration by Turkish Government (World Bank, 1993).

Recovery in female / male wage ratio for 1990 onwards can be explained as follows: at he beginning of the 1990s, there has been special emphasis on women's issues because of the desire to join the European Union (EU). Turkey needs to comply with the EU's directives on equal pay, treatment and opportunities for women in the labour market. Hence, the Directorate General on the Status and Problems of Women (DGSPW) was established in 1990, and charged with improving women's status and promoting their full integration into the economy. In 1991 a separate Ministry of State for Women was created by the new government providing a positive step and commitment at the highest levels. After their establishment there has been an increase in the female / male wage ratio. Although the establishment of these institutions cannot be expected to deliver immediate results; it may be an important reason accounting for the reduction of wage differences between female and male workers in these periods (1993-94).

We note in Table 4.4 that when male and female workers have similar seniority in manufacturing industry women receive lower earnings than men. Moreover, Table 4.5 indicates that the relationship between educational status and earnings are in the expected direction ie earnings increase with the education, but women earn less than men of equivalent educational status. In short, all these statistical analyses show that there are substantial wage differentials between male and female workers in Turkey.

Table 4.4 Average Yearly Gross Earnings in Manufacturing Industry by Gender and Seniority in 1994 (in Turkish Lira)

Seniority	Male	Female	Ratio (F/M)
Less than 1 year	79062	65119	0.82
1 year	95640	74919	0.78
2-4 years	126744	90641	0.71
5-9 years	192539	128484	0.66
10-19 years	260258	197529	0.75
20 years and over	318947	279018	0.87

Source: SIS, 1997, 1994 Employment and Wage Structure Survey, p.27

Table 4.5 Gross Earnings by Gender, and Educational Status in 1994 (in Turkish Lira)

	Male	Female	Ratio
Illiterate or literate without any diploma	135885	78515	0.57
Primary school or junior school	163823	87201	0.53
High school	184956	119709	0.64
Technical high school	271618	129778	0.47
Universities and other higher educational institution	305004	241562	0.79
All other categories	76408	44686	0.58

Source: SIS, 1997, 1994 Employment and Wage Structure Survey, p.25

Now we turn to an analysis of male and female wage differentials in the Turkish Labour market using the 1994 Employment and Wage Structure Survey (SIS) data. In section 2, the conventional methodologies for measuring discrimination are evaluated. In section 3, alternative specification of the earnings functions is estimated. We

present our investigation of the male and female earnings differences and discuss the results in section 4. Finally, section 5 presents concluding remarks.

4.2 Methodology

Analyzing the female - male wage difference is no simple matter because of several non-market factors, which impose constraints on women relative to men in obtaining skills for market. The measured differences in the labour market productivity of males and females is the outcome of several constraints such as cultural rigidities in the occupational and regional movements of women, the traditional occupational roles, and intra-family allocation of time and resources to human capital investments in boys and girls. Therefore, when the comparisons of the labour market productivity of men and women are made that could be overstated in favour of men, as men specialize more in market-relevant skills and women attain more home-specific skills, (Duraisamy and Duraisamy, 1996; King, 1990).

According to Berndt (1991, p.161) many researchers have examined data on the distribution of earnings or wages and have found that the data are skewed, with median earnings usually being less than the mean. One interesting strand of literature has attempted to relate earnings distribution to the distributions of underlying abilities. Beginning with the observation that there are many different and valuable types of abilities such as physical strength, intelligence, grittiness, and so on, researchers have made specific assumptions concerning their statistical distributions. Moreover, it is shown that if each of the relevant abilities is normally distributed but earnings vary with the product of two or more uncorrelated kinds of ability, then the logarithm of earnings, rather than earnings themselves, will be normally distributed. Furthermore,

the semi-logarithmic specification of the human capital earnings function, proposed by Mincer (1974) has been extensively used in the empirical studies. It has been found that the logarithmic specification of earnings proved to be the most successful form, in respect of the econometric criteria, which are firstly whether the optimal properties of the error terms are satisfied and, secondly, the explanatory power of the regression. "More specifically, the former criterion is met on the grounds that the classical assumptions of regression analysis are 'less often' violated than in alternative specifications. The relevance of the second criterion, which pertains to the regression coefficient of determination, is self-evident" (Sapsford and Tzannatos, 1993, p.85).

Usually, two different approaches are employed to detach which part of the differences in earnings/wages is due to differences in endowments of productive characteristics and which part is due to the way these characteristics are compensated in the labour market. First of all, it can be investigated whether there is a fixed disadvantage / reward affiliated with the gender of the worker. Secondly, it can be examined whether individual characteristics of female workers are compensated differently in the labour market than the identical characteristics of men.

In the first approach, the earnings function is run upon the characteristics of all (male and female) workers including a separate variable which indicates the gender of the worker (Psacharopoulos, 1983; Killingsworth, 1990). This regression model can be specified as:

$$\ln (W_i) = C + a(X_i) + b(D_i) + u_i \qquad (4.1)$$

where ln(Wi) is the logarithm of the ith worker's earnings, C is a constant term, X is a vector of measurable personal characteristics such as education, and a is the vector of the estimated coefficients of these characteristics upon pay, D is a (dummy) variable taking the value 1 if the worker is male and 0 if the worker is female, and u is an error term which is assumed to be normally distributed with zero mean and refers to unmeasurable characteristics and random factors.

The sign of the coefficient of the dummy variable indicates which gender receives, on average, lower pay: if $b > 0$, other things being equal, women receive on average lower pay than men and if $b < 0$, other things being equal, men receive on average lower pay than women.

The second approach consists of specifying a wage equation for women and a wage equation for men, running these two regressions separately and comparing the results (Oaxaca, 1973; Blinder, 1973; Neumark, 1987; Draisamy and Duraisamy, 1996). So the estimation begins with the following two regressions (we index men by m and women by f)

$$\ln(W_{mi}) = C_m + \beta_m X_{mi} + u_{mi} \quad i = 1,\ldots, N_m \qquad (4.2)$$

$$\ln(W_{fj}) = C_f + \beta_f X_{fj} + u_{fj} \quad j = 1,\ldots,N_f \qquad (4.3)$$

where ln Wm and ln Wf are the logarithm of mean earnings of men and women respectively, C is the constant term, X is a vector of individual characteristics such as labour market experience, schooling years, etc., which affect wages, β is a vector of respective coefficients on these characteristics, and u is the random disturbance term. So, the pay gap can be decomposed in the following way (Oaxaca, 1973; Blinder, 1973): the difference in the average logarithms of male and female pay ($\ln(W_m)$ –

$\ln(W_f)$ can be shown to be equal to the percentage difference of male and female average pay (W_m and W_f)

$$\ln(W_m) - \ln(W_f) = \ln [(1+ (W_m - W_f) / W_f] \qquad (4.4)$$

$$= (W_m - W_f) / W_f$$

Given the previous two equations and utilising the regression property that the error term has a mean value of zero, we can rewrite equation (4.4) as follows:

$$Ln(W_m) - \ln(W_f) = (C_m - C_f) + (\beta_m X_m - \beta_f X_f) \qquad (4.5)$$

Adding to and subtracting from equation (4.5) the term $(X_f\beta_m)$ or $(X_m\beta_f)$ and rearranging produces the following two 'decompositions' of the gross differential in average pay

$$Ln(W_m) - \ln(W_f) = [(C_m - C_f) + X_f (\beta_m - \beta_f)] + [(X_m - X_f)\beta_m] \qquad (4.6)$$

$$= [(C_m - C_f) + X_m (\beta_m - \beta_f)] + [(X_m - X_f)\beta f] \qquad (4.7)$$

The first term on the right-hand side of (4.6) provides the portion of the wage gap that is due to differences in the values of the coefficients, including the constant term, can be considered to be upper bound of 'unexplained' discrimination. Also, the second term on the right-hand side represents the portion of the wage gap, which is due to differences in measurable productive characteristics held by men and women and can be thought of as non-discriminatory 'explained' discrimination (Sapsford and Tzannatos, 1993, p.228).

It is worth noting that equation (4.6) and (4.7) do not yield the same results. The former decomposition assumes the 'explained' and potentially discriminatory components of the wage gap, if women were paid as men. The latter decomposition assumes that men are paid like women. This is known as the index number problem.

In practice, as Sapsford and Tzannatos (1993, p.230) stated, it is not certain whether a decomposition based on females means will produce a higher or lower estimate for discrimination than a decomposition based on male means. It depends on the relative 'flatness' of the two earnings functions (that is, the curvature of the lines around the region of the average female and male characteristics). On the other hand, in applied research, both decompositions have been employed and produced similar results (Berndt, 1991; Sapsford and Tzannatos, 1993).

4.3 Data, Empirical Model and Estimations

Statistics on the behaviour of the female labour force in developing countries, usually, are plagued by conceptual problems and inadequate data collection methods. In Turkey, until recently, the development of a reliable labour market information system was poor when compared to data concerning population characteristics, international trade, national income and other macro indicators. The historical labour market data series are unreliable and insufficient: a careful examination of labour market and related data published by the OECD, the Government of Turkey, and the ILO, revealed serious omissions and instabilities, through the late 1980s, when the nation-wide Household Labour Force Surveys were first implemented (World Bank, 1993, pp.13-14).

Moreover, the historical data series supply only partial labour supply measures. Especially, they do not show male and female earnings separately, hours of work, and years of schooling by gender, or even the extent of full-and part-time work among the employed.

In this study, the data used in examining wage discrimination for different branches of economic activities in all establishments in mining and quarrying, electricity, gas and water sectors, and establishments with 10 or more employees in manufacturing sector for the year 1994 are obtained from the Employment and Wage Structure Survey conducted by (SIS) the State Institute of Statistics (SIS , 1997, pp. 30-36).

In Turkey, SIS had for the first time started a new study on wage and employment statistics in order to meet the data requirements on wages, and consistent with the conditions of the country in 1992. The Employment and Wage Structure survey were to be conducted every four years and the first survey was completed in 1995 by taking 1994 as the reference period and, this survey was published in 1997. In this survey, average weekly working hours, average hourly wage and, average monthly gross wage and earnings information are collected in detail on individual characteristics of employees. Although the information covers all such data and the country as a whole, it has disadvantages in that the data are available only in grouped form and the wages/earnings can be found by gender only for thirty-eight different occupations in some branches of economic activities. Moreover, other information such as education, age, school years etc., that influence wages cannot be accessed for male and female employees separately.

Thus, firstly we test wage discrimination in thirty-eight different occupations in mining and quarrying, electricity, manufacturing, and water and gas sectors in general. The occupations are classified according to the international standard classification of occupations (see appendix 1). Secondly, the wage discrimination in thirty-eight different occupations in manufacturing sector is examined in particular.

The data contain all establishments in both private and public sectors in mining, quarrying, electricity, gas and water sectors, and establishments with 10 or more employees in the manufacturing sector.

In addition, the data used in statistical analysis of the female-male wage gap in Turkey for twenty different industry within manufacturing sector (see Table 4.1 and 4.3) are obtained from two issues of the Year Book of Labour Statistics published by ILO (51st issue 1992, p.864 and 55th issue 1996, p. 800). The data are limited to manufacturing establishments with 10 or more employees in both private and public sectors.

Information on wages in manufacturing sub-sectors was available only between 1982-1984 and 1988-1994. The figures for the years in between have been interpolated by Newton's forward interpolation formula for each of twenty sub-sectors between the years 1985-1987 (Ghatak, 1978). In addition, twenty different manufacturing sub-industries are classified in line with the International Standard Industrial Classification, (ISIC) (see appendix 2).

We assume 1984 = $q_o = 0$, and 1988 = $q_1 = 4$, the forward formula can be specified as:

$$W(q) = a_o + a_1 (q - 0) \qquad (4.8)$$

the constants a_o, and a_1 are solved from the two given values:

$$W(0) = 1348 = a_o \qquad (4.9)$$

$$W(4) = 7399 = a_o + 4a_1 \qquad (4.10)$$

When the equations (4.9) and (4.10) are solved for ao and a1, the wages for the years 1985, 1986, and 1987 have been obtained by substituting 1, 2, and 3 for q in equation

(4.8). This procedure has been repeated for each sub-sectors for both male and female workers, and the full results are set out in appendix 3.

In this study, we use the alternative specifications on the earnings functions in the context of different econometric models because productivity-related data, such as age, years of schooling, experience etc. are unavailable. These earnings functions have been fitted to the available data in an attempt to explain wage differences in occupations in different branches of economic activities and in manufacturing industry (Gujarati, 1988, chapter. 14).

Our model can be specified as:

$$W_i = C + \beta X_i + u_i \qquad i = 1, \ldots, n \qquad (4.11)$$

where W_i = the daily wage of the *i*-th manufacturing worker in Turkish Lira

$X_i = 1$ for male manufacturing workers

$= 0$ for female workers

u_i = error term

β = a vector of parameters to be estimated.

This model contains only a dummy variable (gender) to find out whether gender makes any difference in a worker's wages within manufacturing, assuming that all other variables such as age, years of experience are held constant. When we assume that the error term is normally distributed with zero mean ($E(u_i) = 0$), we can easily obtain the mean wage of female and male workers from our model.

Mean wage of female worker in manufacturing: $E(W_i \mid X_i = 0) = C$ (4.12)

Mean wage of male worker in manufacturing: $E(W_i | X_i = 1) = C + \beta$ (4.13)

The intercept term C gives the mean wage of female worker and the slope coefficient β shows how much the mean salary of a male differs from the mean salary of his female fellow workers, $C + \beta$ expressing the mean wage of the male wages.

This model enables us to find out whether there is any gender discrimination among the workers on the basis of the t - test. A test of the null hypothesis that there is no gender discrimination between workers can be examined by running our model and discover whether on the basis of the t - test the estimated β is statistically significant.

Before presenting the empirical results, we should note that;

(a) When the earnings functions are estimated using the sub-sample of workers, it causes the sample selection or selectivity problem. In other words, the problem occurs because the wage equation can only be estimated on a sample of participants, since we can only have observations on self-selected sample of women and men. If the participants are not random then the estimation of earnings functions, only on participants, will produce biased estimates of parameters. However, if the sub-sample of participants is a random of the total population, there will be no existing selectivity problem (see Heckman, 1979; Zabalza and Arrufat, 1985). In our study, wages are averaged over a group of workers. Since there is no procedure to remedy this selectivity bias in our aggregate data sets therefore, we ignore this problem.

(b) Homoskedasticity is one of the assumptions of the classical linear regression model, which means that the variance of the disturbance term is constant for all observations. However, when we are dealing with microeconomic data, the

observations may involve substantial differences in magnitude for different units of observations. In this case the assumption of homoskedasticity is not very plausible on the grounds that we use female and male wage data for different occupations and that in some of these occupations, wages are higher than in the others and also male wages are generally higher than females. So, it is reasonable to expect the residuals for the higher wages would have a higher variance than the residuals for the smaller wages.

When we estimate earnings functions, using cross-section data, it could cause heteroscedasticity which means that the error terms may not have constant variance as assumed in the ordinary least squares method (Kmenta, 1990; Maddala, 1992). Therefore, we tested this assumption using the *Goldfeld and Quandt method* for heteroscedasticity for each equation in cross-section analysis of wage discrimination. The test is explained as follows; firstly we ranked the observations (76) according to the values of wages, beginning with the lowest value of wages. Omitting the middle 12 observations as is suggested by Gujarati (1988, p. 334), the ordinary least squares regressions based on the first 32 and the last 32 observations and their associated residual sums of squares (RSS_1 and RSS_2) are obtained; RSS_1 representing the RSS from the regression corresponding to the smaller value of wages and RSS_2 from the larger value of wages. Then, the ratio, RSS_2 / RSS_1 can be assumed to have an F–distribution with the same degrees of freedom in the numerator and the denominator. The critical F value for 30 degrees of freedom at the 5 per cent level is 1.84. So if the estimated value is greater than the critical value, we can say that there is heteroscedasticity in the error variance, if it is smaller than the critical value we may conclude that the assumption of homoscedasticity is valid (Gujurati, 1988). The test results reveal that some of our equations suffer from heteroscedasticity. It is suggested that if instead of running the regression $W_i = C + \beta X_i + u_i$, we run

$$LnW_i = C + \beta X_i + u_i$$

generally it reduces heteroscedasticity, because "this way one takes care of the problem of giving undue weight to the large observations" (Maddala, 1992, p.94; Kmenta, 1990). However, logarithmic transformation cannot be applied to case where variables are zero or negative. Therefore, such transformation is inapplicable to our data when some of the W (dependent variable: wages) and X (independent variable: dummy; gender) values are zero or negative. So, the semi-logarithmic specification of earnings function ($LnW_i = C + \beta X_i + u_i$) is employed to test wage discrimination for all equations in this study because we use dummy (gender) as an explanatory variable which contains 0 (for females) and 1 (for male) in our equations.

4.4 Empirical Results

First of all, the earnings functions for males and females are estimated for thirty-eight occupations in the manufacturing sector using cross-section data for the year 1994. According to the test results gender has a positive and statistically significant effect on earnings at the 5 percent level. In addition, we analysed the significance of regressions using the F – test. The result of F- test shows that R^2 (the coefficient of determination) is statistically significant at the 5 per cent confidence level. The adjusted R^2 is 0.12 which suggests that almost 12 percent of variance in the natural logarithm of individual wages is explained by gender discrimination, and the remaining 88 percent may be explained by the productivity-linked characteristics such as experience, years of schooling etc. The results are displayed in appendix 4.

As was explained earlier, we can obtain mean wage of female and male workers using the formula (4.12) and (4.13). In the manufacturing sector the estimated mean hourly wage of female workers is 48.74 Turkish Lira(TL) and that of male workers is 62.01 TL. As is seen women earn less than men on average.

Secondly, the wage disparity in thirty-eight occupations in branches of economic activity: mining and quarrying and electricity, manufacturing, gas and water in general is examined and the results are set out in appendix 5. The mean hourly wage of female workers is 45.6 TL and the mean hourly wage of males is 61.12 TL. This indicates that there are apparent differences in wages between men and women. Also this is supported by our empirical results, that gender has a positive and statistically significant effect on wages at the 5 percent level. This means that we reject the null hypothesis and say that there is gender discrimination in thirty-eight occupations in Turkish mining, quarrying, electricity, gas and water and manufacturing sectors. Moreover, the F – test indicates that R^2 is statistically significant at the 5 per cent level. The adjusted R^2 suggests that almost 13 percent of the variance in the natural logarithm of individual wages is explained by gender discrimination. Eighty-seven percent can be explained by factors such as education, experience etc., which are measurable productivity characteristics, and some variables such as school quality, family background, ability, etc., which also affect productivity and earnings.

4.5 Concluding Remarks

Wage discrimination between male and female workers in thirty-eight different occupations in the following branches of economic activity - mining, and quarrying, electricity, manufacturing, gas and water sectors in general, and thirty-eight

occupations in manufacturing sector in particular has been examined by using cross-section analysis.

The results are consistent with the finding that gender segregation is an important explanatory factor for wage differences between men and women (Gunderson, 1989; Millward and Woodland, 1995). When we tested wage discrimination in thirty-eight occupations such as, accountant, cook, or cleaning workers, etc. in the manufacturing sector for the year of 1994, we found that there were very significant wage differentials between men and women. This indicates that even when female and male workers do the same job in the same sector, they are paid differently. Furthermore, the wage disparities between male and female workers are very significant in thirty-eight occupations in all establishments in both private and public sectors of mining, electricity, gas and water sectors and establishments with 10 or more employees in manufacturing industry in the year of 1994.

Because of lack of data we have not applied the decomposition technique. Instead we have applied, with the available data, the alternative specifications on the earnings function in the context of a different econometric model. We believe that this is the first time econometric methods have been used to measure wage discrimination in the Turkish labour market. We have maximized the use of the available data resources.

In our study, we find that gender has a statistically significant effect on wages. As shown in Table 4.4 and 4.5 even if female and male workers in the same branch of economic activity have the same level of education, and seniority, women earn less than men on average.

In Turkey, information on workers' productivity and other individual economics characteristics are very difficult to acquire for industrial establishments. As we mentioned in chapter 2, Phelps (1972) argues that incomplete information on prospective employees is one reason for discrimination. When employers are unable to obtain information and statistics about their workers' endowments, they rely on common and traditional social assumptions, and this procedure may be gender biased in the context of Turkey's patriarchal culture.

In addition, as we explained in chapter 2, it is believed among employers that women are not as reliable in employment as men, because of their domestic responsibilities. For this reason, women and their gender-ascribed traits play a very important role when they are employed and paid in the labour market.

4.6 Appendix 1

International Standard Classification of Occupations in Mining, Quarrying, Electricity, Gas, Water, and Manufacturing

027 Other engineers not classified elsewhere

068 Pharmacist assistants and labourants

112 Accountant

211 Employers and managers of manufacturing, construction, water, electricity and gas enterprises

300 Group chief of officials (public and private) (Data processing manager)

310 Public administration officials

321 Steno, typists, message writers

331 Assistant accountants and cashiers

380 Telephone and telegraph operators

393 Officials (excluding Public administration officials -310-)

531 Cook and assistant cook

532 Waiter, people employed in bar and related workers

551 Land watchman, servant at an office, door keeper

552 Cleaning works

560 Persons employed in laundry room

700 Director of work and related workers

751 Fibre - preparing worker

752 Spinning and winding machine operators

754 Textiles weavers

755 Tricot makers (including stockings)

756 Bleaching-dyeing and cleaning machineoperators

757 Towel weavers

774 Food processing and related workers

776 Baked - goods, cereal and chocolate - production workers

779 Food and beverage workers not classified elsewhere

781 Tobacco production machine workers

783 Cigarette production

791 Tailor (woman, man)

792 Fur and leather tailors and related workers

795 Sewing machine operators and related workers

799 Tailor and related workers not classified elsewhere

839 Handworkers and metal processing worker not classified elsewhere

849 Machine repaires not elsewhere classified, sensetive repairers (excluding electricity)

853 Electirical and electronic tool installers

859 Electirical, electronically and related workers not classified elsewhere

901 Plastic - products and rubber - product machine operators

944 Chemical- products producers (parfume, cleaning powder, paint, match, etc.,) production workers

994 Unqualified workers not classified elsewhere

Source: SIS, Employment and Wage Structure, 1997, pp. 15-17

4.7 Appendix 2

International Standard Industrial Classification in Manufacturing Sector

311-12 Food manufacturing

313 Beverage industries

314 Tobacco manufactures

321 Manufacture of textiles

322 Manufacture of wearing apparel, except foodwear

323 Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel

331 Manufacture of wood and wood and cork products, except furniture

332 Manufacture of furniture and fixtures, except primarily metal

341 Manufacture of paper and paper products

342 Printing, publishing and allied industries

351 Manufacture of industrial chemicals

354 Manufacture of miscellaneous products of petroleum and coal

355 Manufacture of rubber products

36 Manufacture of non-metalic mineral products

37 Basic metal industries

381 Manufacture of fabricated metal products

382 Manufacture of machinery except electrical

383 Manufacture of electrical machinery apparatus, appliances and supplies

384 Manufacture of transport equipment

390 Other Manufacturing industries

Source: ILO, (1996), The Yearbook of Statistics, (55th issue), p. 1010

4.8 Appendix 3

We interpolate the data for the missing years for male and female workers in 20 sub-sectors, which are as classified in appendix 2. The results are as follows:

For Males

311-312 $W(q) = 0 = a_o + a_1(0-0) = a_o = 1348$ $W(4) = a_o + 4a_1 \quad a_1 = 1512.75$

1985, $W(1) = 1348 + 1512.75 = 2860.75$

1986, $W(2) = 1348 + 2(1512.75) = 4373.5$

1987, $W(3) = 1348 + 3(1512.75) = 5886.25$

313 $W(0) = a_o = 1461$ $W(4) = a_1 = 1688.75$

1985, $W(1) = 1461 + 1688.75 = 3149.75$

1986, $W(2) = 1461 + 2(1688.75) = 4838.5$

1987, $W(3) = 1461 + 3(1688.75) = 6527.75$

314 $W(0) = a_o = 1897$ $W(4) = a_1 = 1282.75$

1985, $W(1) = 1897 + 1282.75 = 3179.75$

1986, $W(2) = 1897 + 2(1282.75) = 4462.5$

1987, $W(3) = 1897 + 3(1282.75) = 5745.25$

321 $W(0) = a_o = 1427$ $W(4) = a_1 = 1440.25$

1985, $W(1) = 1427 + 1440.25 = 2867.25$

1986, $W(2) = 1427 + 2(1440.25) = 4307.5$

1987, $W(3) = 1427 + 3(1440.25) = 5747.75$

322 $W(0) = a_o = 1069$ $W(4) = a_1 = 1468.5$

1985, $W(1) = 10690+1468.5 = 2537.5$

1986, $W(2) = 1069+2(1468.5) = 4006$

1987, $W(3) = 1069 +3(1468.5) = 5474.5$

323 $W(0) = a_o = 1130$ $W(4) = a_1 = 1146.25$

1985, W(1) = 1130 + 1146.25 = 2276.25

1986, W(2) = 1130 +2(1146.25) = 3422.5

1987, W(3) = 1130 + 3(1146.25) = 4568.75

331 W(0) = a_o = 1106 W(4) = a_1 = 1053.75

1985, W(1)= 1106 + 1053.75 = 2159.75

1986, W(2) = 1106 + 2(1053.75) = 3213.5

1987, W(3) = 1106 + 3(1053.75) = 4267.25

332 W(0) = a_o = 1030 W(4) = a_1= 1080

1985, W(1) = 1030 + 1080 = 2110

1986, W(2) = 1030 + 2(1080) = 3190

1987, W(3) = 1030 + 3(1080) = 4270

341 W(0) = a_o = 1529 W(4)= a_1 = 1751.75

1985, W(1) = 1529 + 1751.75 = 3280.75

1986, W(2) = 1529 + 2(1751.75) = 5032.5

1987, W(3) = 1529 + 3(1751.75) = 6784.25

342 W(0) = a_o = 1243 W(4) = a_1 = 1762

1985, W(1) = 1243 + 1762 = 3005

1986, W(2) = 1243 + 2(1762) = 4767

1987, W(3) = 1243 + 3(1762) = 6529

351 W(0) = a_o = 1487 W(4) = a_1 = 2716.25

1985, W(1) = 1487 + 2716.25 = 4203.25

1986, W(2) = 1487 + 2(2716.25) = 6919.5

1987, W(3) = 1487 + 3(2716.25) = 9635.75

354 W(0) = a_o = 1597 W(4) = a_1 = 3765

1985, W(1) = 1597 + 3765 = 5362

1986, W(2) = 1597 + 2(3765) = 9127

1987, W(3) = 1597 + 3(3765) = 12892

355 W(0) = a_o= 1326 W(4) = a_1= 2400.75

1985, W(1) = 1326 + 2400.75 = 3726.75

1986, W(2) = 1326 + 2(2400.75) = 6127.5

1987, W(3) = 1326 + 3(2400.75) = 8528.25

36 W(0) = ao= 1326 W(4) = a_1 = 1946.5

1985, W(1) = 1326 + 1946.5 = 2072.5

1986, W(2) = 1326 + 2(1946.5) = 5219

1987, W(3) = 1326 + 3(1946.5) = 7165.5

37 W(0) = ao= 1552 = W(4) = a_1 = 2261.5

1985, W(1) = 1552 + 2261.5 = 3813.5

1986, W(2) = 1552 + 2(2261.5) = 6075

1987, W(3) = 1552 + 3(2261.5) = 8336.5

381 W(0) = a_o= 1262 W(4) = a_1 = 1610.25

1985, W(1) = 1262 + 1610.25 = 2872.25

1986, W(2) = 1262 + 2(1610.25) = 4482.5

1987, W(3) = 1262 + 3(1610.25) = 6092.75

382 W(0) = a_o = 1320 W(4) = a_1 = 1817.75

1985, W(1) = 1320 + 1817.75 = 3137.75

1986, W(2) = 1320 + 2(1817.75) = 4955.5

1987, W(3) = 1320 + 3(1817.75) = 6773.25

383 W(0) = a_o = 1341 W(4) = a_1 = 2380.75

1985, W(1) = 1341 + 2380.75 = 3721.75

1986, W(2) = 1341 + 2(2380.75) = 6102.5

1987, $W(3) = 1341 + 3(2380.75) = 8483.25$

384 $W(0) = a_o = 1484$ $W(4) = a_1 = 1834.25$

1985, $W(1) = 1484 + 1834.25 = 3318.25$

1986, $W(2) = 1484 + 2(1834.25) = 5152.5$

1987, $W(3) = 1484 + 3(1834.25) = 6986.75$

390 $W(0) = a_0 = 1169$ $W(4) = a_1 = 1518.75$

1985, $W(1) = 1169 + 1518.75 = 2687.75$

1986, $W(2) = 1169 + 2(1518.75) = 4206.5$

1987, $W(3) = 1169 + 3(1518.75) = 5725.25$

For Females

311 - 312 $W(0) = a_0 = 1195$ $W(4) = a_1 = 1187.5$

1985, $W(1) = 1195 + 1187.5 = 2382.5$

1986, $W(2) = 1195 + 2(1187.5) = 3570$

1987, $W(3) = 1195 + 3(1187.5) = 4757.5$

313 $W(0) = a_0 = 1417$ $W(4) = a_1 = 1481$

1985, $W(1) = 1417 + 1481 = 2898$

1986, $W(2) = 1417 + 2(1481) = 4379$

1987, $W(3) = 1417 + 3(1481) = 5860$

314 $W(0) = a_0 = 1368$ $W(4) = a_1 = 947.5$

1985, $W(1) = 1368 + 947.5 = 2315.5$

1986, $W(2) = 1368 + 2(947.5) = 3263$

1987, $W(3) = 1368 + 3(947.5) = 4210.5$

321 $W(0) = a_o = 1308$ $W(4) = a_1 = 874.75$

1985, $W(1) = 1308 + 874.75 = 2182.75$

1986, W(2) = 1308 + 2(874.75) = 3057.5

1987, W(3) = 1308 + 3(874.75) = 3932.25

322 W(0) = a_o= 1046 W(4) = a_1 = 1048

1985, W(1) = 1046 + 1048 = 2094

1986, W(2) = 1046 + 2(1048) = 3142

1987, W(3) = 1046 + 3(1048) = 4190

323 W(0) = a_o = 1184 W(4) = a_1 = 1380.25

1985, W(1) = 1184 + 1380.25 = 2564.25

1986, W(2) = 1184 + 2(1380.25) = 3944.5

1987, W(3) = 1184 + 3(1380.25) = 5324.75

331 W(0) = a_o = 1181 W(4) = a_1 = 1091.5

1985, W(1) = 1181 + 1091.5 = 2272.5

1986, W(2) = 1181 + 2(1091.5) = 3364

1987, W(3) = 1181 + 3(1091.5) = 4455.5

332 W(0) = a_o = 1103 W(4) = a_1= 1286.25

1985, W(1) = 1103 + 1286.25 = 2389.25

1986, W(2) = 1103 + 2(1286.25) = 3675.5

1987, W(3) = 1103 + 3(1286.25) = 4961.75

341 W(0) = a_o = 1274 W(4) = a_1= 1435.75

1985, W(1) = 1274 + 1435.75 = 2709.75

1986, W(2) = 1274 + 2(1435.75) = 4145.5

1987, W(3) = 1274 + 3(1435.75) = 5581.25

342 W(0) = a_0 = 1311 W(4) = a_1 = 1749.25

1985, W(1) = 1311 + 1749.25 = 3060.25

1986, W(2) = 1311 + 2(1749.25) = 4809.5

1987, $W(3) = 1311 + 3(1749.25) = 6558.75$

351 $W(0) = a_o = 1434$ $W(4) = a_1 = 2091.25$

1985, $W(1) = 1434 + 2091.25 = 3525.25$

1986, $W(2) = 1434 + 2(2091.25) = 5616.5$

1987, $W(3) = 1434 + 3(2091.25) = 7707.75$

354 $W(0) = a_o = 1498$ $W(4) = a_1 = 1645.5$

1985, $W(1) = 1498 + 1645.5 = 3143.5$

1986, $W(2) = 1498 + 2(1645.5) = 4789$

1987, $W(3) = 1498 + 3(1645.5) = 6434.5$

355 $W(0) = a_o = 1254$ $W(4) = a_1 = 1587$

1985, $W(1) = 1254 + 1587 = 2841$

1986, $W(2) = 1254 + 2(1587) = 4428$

1987, $W(3) = 1254 + 3(1587) = 6015$

36 $W(0) = a_o = 1209$ $W(4) = a_1 = 1661$

1985, $W(1) = 1209 + 1661 = 2870$

1986, $W(2) = 1209 + 2(1661) = 4531$

1987, $W(3) = 1209 + 3(1661) = 6192$

37 $W(0) = a_o = 1541$ $W(4) = a_1 = 1706$

1985, $W(1) = 1541 + 1706 = 3247$

1986, $W(2) = 1541 + 2(1706) = 4531$

1987, $W(3) = 1541 + 3(1706) = 6659$

381 $W(0) = a_o = 1259$ $W(4) = a_1 = 1756.25$

1985, $W(1) = 1259 + 1756.25 = 3015.25$

1986, $W(2) = 1259 + 2(1756.25) = 4771$

1987, $W(3) = 1259 + 3(1756.25) = 6527.75$

382 $W(0) = a_o = 1334$ $W(4) = a_1 = 1566$

1985, $W(1) = 1334 + 1566 = 2900$

1986, $W(2) = 1334 + 2(1566) = 4466$

1987, $W(3) = 1334 + 3(1566) = 6032$

383 $W(0) = a_o = 1254$ $W(4) = a_1 = 1572.5$

1985, $W(1) = 1254 + 1572.5 = 2826.5$

1986, $W(2) = 1254 + 2(1572.5) = 4398$

1987, $W(3) = 1254 + 3(1572.5) = 5970$

384 $W(0) = a_o = 1432$ $W(4) = a_1 = 913.25$

1985, $W(1) = 1432 + 913.25 = 2345.25$

1986, $W(2) = 1432 + 2(913.25) = 3258.5$

1987, $W(3) = 1432 + 3(913.25) = 4171.75$

390 $W(0) = a_o = 1173$ $W(4) = a_1 = 962$

1985, $W(1) = 1173 + 962 = 2135$

1986, $W(2) = 1173 + 2(962) = 3097$

1987, $W(3) = 1173 + 3(962) = 4059$

4.9 Appendix 4

Table 4-1 Estimates of Earnings Functions for 38 Occupations in Manufacturing Sector, 1994

Number of Observations: 76 *Dependent Variable:*Log Hourly wages *Explanatory Variables*	*Estimates of Coefficients*	*T- Values of Estimates*	R^2 *Adjusted* R^2 *Durbin-Watson statistics*
Constant	3.7079	55.529	$R^2 = 0.1389$
Sex (Male=1, Female=0)	0.3263	3.4561	Adjusted $R^2 = 0.1273$ Durbin-Watson statistics= 2.239 F-statistic F(1,74) = 11.94

Source: Computed from (SIS, 1997), by using the Micro TSP (version 7.0) computer software.

4.10 Appendix 5

Table 4-1 Estimates of Earnings Functions for 38 Occupations in the Following Branches of Economic Activity - mining, and quarrying, electricity, manufacturing, gas and water sectors, 1994

Number of Observations: 76 *Dependent Variable*: Log Hourly wages *Explanatory Variables*	*Estimates of Coefficients*	*T-Values Of Estimates*	R^2 *Adjusted* R^2 *Durbin-Watson statistics*
Constant	3.7214	56.8862	$R^2 = 0.1458$
Sex (Male=1, Female=0)	0.3288	3.5540	Adjusted $R^2 = 0.1342$ Durbin-Watson statistics= 1.7343 F-statistic F(1,74) = 12.63

Source: Computed from (SIS, 1997), by using the Micro TSP (version 7.0) computer software.

CHAPTER 5

DETERMINING THE PRESENCE AND EXTENT OF OCCUPATIONAL GENDER SEGREGATION IN TURKEY BETWEEN 1975-1990

5.1 Introduction

The cross-section tests carried out in the previous Chapter for occupations for the following branches of economic activity - electricity, manufacturing, mining, and quarrying, gas and water - provide evidence that there is wage discrimination between male and female workers in the Turkish labour market. According to our econometric results, approximately 80 percent of the gender difference in wages could be explained by factors such as years of schooling, experience, on-the job-training and occupational segregation. The 20 percent which remains unexplained suggest the presence of gender discrimination in the Turkish labour market.

Empirical studies of gender wage differences in other countries that specified the occupational characteristics / classifications in their models, have found that between 10 to 40 percent of the gender wage difference is accounted for by occupational segregation (Miller, 1987; Rimmer, 1991; Pike, 1982; Treiman and Hartmann, 1981). The OECD report (1985) claims that the most important explanation for the continuing gender differentials in wages is occupational segregation and women's concentration in low-paying occupations (OECD, 1985, p.88). Therefore, this Chapter seeks to test the presence and extent of occupational segregation by gender in the Turkish labour market.

Occupational segregation refers to the unbalanced distribution of the genders across occupations in a manner inconsistent with their overall shares of employment, irrespective of the nature of job allocation (Jonung, 1984, p.45; Watts and Rich, 1992, p.288). Hakim (1979) makes a very useful distinction between horizontal occupational segregation and vertical occupational segregation. The former exists when men and women are disproportionately working in different occupational groups, and the latter exists when men are working in the higher level jobs within an occupation and women are working in the lower level jobs within an occupation.

As in almost every society, in Turkey women and men are found in different occupations and economic activities, and within occupations they are found at different grades. In 1992 approximately 74 % of women were employed in agriculture, 12 % in services, and 7 % in industry. On the other hand almost 35 % of men are employed in agriculture, 38 % in services, and 24 % in industry. On the subject of employment status, 68 % of women in the labour force are unpaid family workers and 25 % are wage earners or self-employed, in contrast to 82 % of men who are wage earners or self-employed (SIS, Household Labour Force Survey Results, 1995). These figures indicate that women are clustered in the lower paid occupations and the work which they do is generally traditional household jobs.

Occupational gender segregation in the Turkish labour market has not been studied using the new Karmel and Maclachlan index nor any other alternative indexes such as, Marginal Matching, or the Sex Ratio. However, the World Bank (1993) investigated occupational gender segregation in Turkey between 1960-1990 using

census data that were based on broad (one-digit) definitions of occupational and industrial categories. They applied the Duncan and Duncan or 'dissimilarity', index (ID) and 'women and employment' index (WE), which is commonly used. It is suggested that the use of broad occupational groups means this is likely to have underestimated the level of occupational segregation, because it masks segregation at a more disaggregated level (Presser and Kishor, 1991). The World Bank report (1993), using broad groupings, showed that there was very significant and persistent occupational segregation over the period 1960-1990 in the Turkish labour market (World Bank, 1993, p.26).

There are many segregation indices in the literature, such as ID, WE, Sex Ratio, and Marginal Matching. However, the decomposition of the Karmel and Maclachlan index (KI) has been used in this study to measure the changes in the pattern of occupational gender segregation. The Karmel-Maclachlan index is preferred to other indices because the decomposition of the change in the index overtime allows us to identify the changes in occupational segregation, which arise from the changes in the proportion of males and females in each occupation, the changes in the occupational structure, and also changes in the overall gender composition of the labour force. The "Composition Effect" shows the extent to which male and female workers are being integrated within occupations over time after taking account of changes in employment shares by gender and occupation. Therefore, the 'Composition Effect' reflects the hiring and training practices of employers together with the labour force behaviour of the genders. In other words it picks up both demand and supply side changes in the labour market. In addition, the degree of gender segregation in each occupational group and the pattern of changes over time are estimated by using this

index and its procedure gives us a more detailed picture of the contribution of specific occupations to the overall pattern of gender segregation (Watts, 1992; 1995).

In section 2, the criteria for the evaluation of indexes are mentioned. The most commonly used indexes of occupational segregation namely, the Index of Dissimilarity (ID), the Women and Employment index (WE), and the Sex Ratio index are evaluated in section 3. The new alternative indices such as Marginal Matching, the Gini Coefficient and the Karmel and Maclachlan index (KI) are critically assessed and the construction of the KI index and its decomposition are discussed in section 4. The estimated measures of occupational gender segregation are analyzed in the next section. In the final section, concluding remarks are presented.

5.2 The Criteria for the Judgment of Indexes

James and Taeuber (1985) introduced *four criteria* by which to judge the applicability of the segregation indexes. The first criterion is *Composition Invariance*, which refers to "the invariance of the index following uniform, percentage changes in the number of males and females in each occupation reflecting the overall, but typically unequal, percentage changes in male and female employment" (Watts, 1997, p.464). The second criterion is *Organisation Equivalence* whereby the index is unaffected either by the combination of two units (occupational groups) which have an identical pattern of segregation, or by the division of a single occupational group into multiple units each with identical segregation patterns. Thirdly, *Size Invariance* refers to the invariance of the index when the populations are increased proportionately, thus $S(\lambda N) = S(N)$ where λ stands for a positive scalar. Finally, the strong *Principle of Transfers* requires that segregation is expected to decrease when (fe)male workers

move from occupations of high to low concentration of their gender, ceteris paribus, hence the overall gender composition of employment and occupational structure are unchanged (Siltanen, 1990, Watts 1992). On the other hand the Principle of Transfers in its weak form requires that the transfer of a female worker from a female dominated occupation to a male dominated occupation and her substitution by a male worker from the male dominated occupation leads to a reduction in the index, as both occupations have become less gender dominated (Watts, 1998, p.6).

Siltanen (1990, p.12) argues that a further criterion needs to be meet. "The satisfactory measures of occupational segregation must be Gender Symmetric, so that its magnitude is unaffected by replacing male employment or share data by corresponding female numbers and vice versa in the index definition".

Watts (1997) also argues that the assessment of different indexes, based only on the first four criteria mentioned above, is not adequate for an index of occupational segregation. It is usual to examine the trends in the pattern of occupational gender segregation over time, and thus the gender shares of total employment will change and this is usually accompanied by a change in the allocation of employment across occupations. Therefore, according to many economists and sociologists (Jonung, 1984; Rubery, 1988; Blackburn, Siltanen, and Jarman, 1995; Watts, 1992; 1997; 1997a) the whole index of gender segregation should be margin free. That is, the measurement of segregation over time must avoid the impact of the changing gender shares of total employment and also the impact of the changing occupational structure (Watts, 1997, p.464).

On the other hand, Blackburn *et al* (1993) do not accept the criteria of Composition Invariance, made by James and Taeuber (1985), as necessary for a measure of segregation in employment, on the grounds that the uniform change in employment across all occupations would only be relevant in exceptional circumstances. They define the criterion of Gender Composition Invariance instead of Composition Invariance and their criterion requires that "the measure of segregation, which is the relationship between gender, occupations and gender, should not be directly influenced by the ratio of women to men in the total labour force" (Blackburn *et al*, 1993, p.345). Also, they develop a new criterion, namely Gender Occupations invariance, which assumes that "the measure should not be directly influenced by the relative numbers of workers in 'female dominated' and 'male dominated' occupations" (Blackburn *et al*, 1993, p.345).

Nevertheless, Watts (1992; 1994; 1997) claims that a suitable index of gross occupational segregation should satisfy the criteria of *organisation equivalence*, *size invariance*, *gender symmetry* and the *principle of transfers in its weak form.* The requirements of composition and occupation invariance, and the strong form of the principle of transfers are unnecessarily restrictive criteria in judging the adequacy of an index of gender segregation. An appropriate index of occupational gender segregation should satisfy the four properties listed above, and changes in the index magnitude should be decomposed to yield a composition effect that is independent of changes in the occupational structure and overall gender shares of employment. The composition effect is then compatible with the criteria of composition and occupation invariance. The indexes of occupational segregation will be assessed in the light of these four criteria, namely organisation equivalence, size invariance, gender

symmetry, and the principle of transfers in its weak form. In addition, along with these properties, the change over time in a measure of occupational segregation should be decomposed to isolate a margin-free component (that is the composition effect), which is independent of the interrelated changes in the overall gender shares of employment and the occupational structure.

5.3 Gender Segregation Measures

5.3.1 The Index of Dissimilarity

The dissimilarity index ID, which was originally defined by Duncan and Duncan (1955) in a study of residential segregation by race, is the most commonly used measure of segregation (e.g., Jonung 1984; Lewis 1982, 1985; Rubery and Tarling 1988; Beller 1982). Many studies have applied the index of dissimilarity in their analysis of occupational segregation without question, on the grounds that it has good explanatory power and is easy to compute.

This index is interpreted as measuring the percentage of the male (female) labour force required to shift between occupation or industry categories to make sure that the distribution of males (females) is the same as that of females (males) (Karmel and Maclachlan, 1988, p.187).

The index can be defined as

$$DI = 1/2 \sum | W_i / W - M_i /M |$$

Where W_i and M_i are respectively, the number of women and men in occupation *i*, and W and M are the total number of women and men in the labour force. This index

satisfies the properties specified by Watts (1992), namely organisation equivalence, size invariance, gender symmetry and the principle of transfers in its weak form.

Although the index of dissimilarity is very popular, it has been criticised more recently. Cortese, Frank and Cohen (1976) explain that the Dissimilarity index measures the percentage of either males or females who must be shifted, without replacement, to achieve zero segregation (pp. 634-635). Watts (1998) points out that "all excess (fe)males in (fe)male dominated occupations are culled, so that the distribution of employment associated with gender integration, explicit in the ID measure, differs in its occupational structure from the actual employment distribution" (pp. 8-9). Therefore the interpretation of changes in the value of the ID index over time and the decomposition of these changes into different components such as gender composition effect, structural (occupational) effect is not clear.

The ID index fails to meet the criteria of occupation invariance, but does meet the criteria of composition invariance. For example, Beller's (1982) calculations of the ID index based on a standardized distribution of employment by occupation, (attained by using the gender shares by occupation in period 2 to period 1 levels of total employment by occupation), is Occupations Invariant, but is not Composition Invariant because the comparison of period 2 to period 1 is based on unequal overall gender shares of employment (Watts, 1995). Watts (1998) has claimed that the decomposition of changes in this index over time is flawed and does not meet composition and occupation invariance simultaneously. Therefore the ID index is not suitable to estimate the pattern of occupational segregation over time because an appropriate decomposition is not possible under this index.

5.3.2 Concentration Index

The weaknesses of the DI were pointed out by Moir and Selby-Smith (1979); this is that, if the female (male) labour force were redistributed in the manner suggested by the index, there would be, necessarily, a change in the occupational structure of the labour force. On the other hand, Jonung (1984) claims that transferring women into men's occupation to make the occupational distribution of women identical to that of men is not practical. This redistribution could totally change the occupational distribution of the total labour force and nearly destroy those occupations where women comprise a great majority. On the other hand if we ask how many and what percentage would actually have to move in order to integrate the labour market, we would need a different index. Such a measure is the *Concentration Index*, (CI) which compares women's relative distribution to the relative distribution across occupations of the total labour force. This index is defined as follows:

$$C = \tfrac{1}{2} \sum | N_i / N - W_i / W |$$

Where N_i and N are the number of persons in occupation *i* and the number of persons in the labour force, W_i and W are the number of women in occupation *i* and number of women in the labour force. This index can be explained as the proportion of women in employment that must move in order to make women's occupational distribution identical to that of total employment.

The index of concentration measures the extent of which women are segmented from the rest of the labour force rather than the degree of segregation of men and women within different occupations. This index however has some disadvantages. Its maximum depends on the share of women in the labour force, and is equal to 100

minus the percentage of women in the labour force. So it is not symmetrical, the index value depends on whether it is calculated with respect to men and women. To make any comparison of the concentration of men and women in the work force a separate calculation for men and women is required (Jonung, 1984, pp. 47-48).

5.3.3 The Women and Employment Index

This index was presented by the OECD in their report on Women and Employment in 1980. The pattern of segregation is described using the coefficients of female representation for each occupational area and calculated by dividing the female share of employment in the occupational area by the female share of the total labour force. The data used in this study were at the one-digit level of occupational classifications.

In the OECD report (1980) the index is defined as the average absolute difference between the coefficients of female representation and unity. The average was weighted by the employment size of the economic sectors. It is easier to think of it as the sum of the differences between the observed and expected proportions of women in an occupation, all differences being measured positively (Blackburn *et al*, 1993, p.343). The women and employment index can be described as follows:

$$WE = \sum | W_i /W - N_i /N |$$

Where W_i and W stands for the number of women in occupation *i* and the total number of women in the labour force, N_i and N are the number of persons in occupation *i* and the number of persons in the labour force.

The index has some shortcomings in that it does not lie between zero and one, like the usual indices of concentration. Its maximum value is two minus twice the

employment share of women and so it depends on the female share of employment. Also, it is not symmetrical for men and women, and gives a different value if calculated for men in the way calculated for women (the OECD, 1985, p.64). Furthermore the calculation of the WE index can be criticized on the grounds that the index value understates the extent of gender segregation because it was based on broad (one-digit) level.

5.3.4 The Sex Ratio Index

This index was introduced by Hakim (1979; 1981; 1992) in the occupational gender segregation studies organized by the Department of Employment in the UK. According to Hakim's research, over the 20th century, occupational gender segregation has declined in Britain. However other researchers have shown, using different measures like Marginal Matching and the Karmel and Maclachlan index, that occupational gender segregation has increased (Barrientos, 1994; Blackburn, Siltanen and Jarman, 1995). The problem with this index is that the decrease in occupational gender segregation is in fact due to the sensitivity of the index to changes in women's share of the labour force (Blackburn *et al* 1995).

The SR index is based on the observation that proportionately more women (or men) are employed in some occupations or industries than the overall ratio of the two gender in the total work force. So if the actual ratio of women to men in a given sector is higher than the expected ratio, we can say that the sector is over-represented and if it is opposite, the sector can be said to be under-represented (Hakim, 1981).

Watts (1990) defines the index as the ratio of the actual to the expected female shares of the over-represented occupations minus the corresponding ratio of female shares for under-represented occupations, so that:

$$SR = (W_f . N) / (N_f . W) - (W_m . N) / (N_m . W)$$

$$= (N / W) (W_f / N_f - W_m / N)$$

Where W_f and W_m are number of women in 'female' and 'male' occupations, N_f and N_m are the total number of workers in 'female' occupations and total number of workers in 'male' occupations. The W and N represent the number of women in the labour force and total number of workers in the labour force, respectively.

When we consider James and Taeubers'(1985) proposed criteria for a satisfactory measure of segregation, then the sex ratio does not demonstrate composition invariance and gender symmetry. Due to the lack of composition invariance the SR index will differ with a change in the relative level of female participation when the gender composition of job aggregates remain constant. Also due to the absence of gender symmetry its results and interpretation are changed by the replacement of male for female data (Siltanen, 1990).

Finally Tzannatos (1990) has conclude that "the SR index is not dependent only on relative values, and this results in the undesirable properties of unboundness and ambiguous movements when segregation and the size of the labour force change. This is clearly inappropriate for a study on segregation" (Tzannatos, 1990, p. 106).

5.4 Alternative Measures of Segregation

As was seen above, the most commonly used gender segregation indexes have shortcomings. For instance, they are affected by some factors other than segregation itself, so that the index may increase or decrease depending on another factor such as the gender composition of the labour force. In addition, as SR and WE have upper limits of values for measured segregation, when the index values across time are compared it creates difficulties because the maximum value depends on the labour force composition in each time period.

Three alternative measures of segregation proposed to overcome these problems are, Marginal Matching, MM, the Gini Coefficient and the Karmel and Maclachlan index, KI, (see Karmel and Maclachlan 1988; Siltanen 1990; Blackburn *et al* 1993; Watts, 1990, 1992, 1994). These indexes need to be evaluated in the light of the James and Taeuber criteria for the appropriate measure of gender segregation, as well as composition and occupations invariance.

5.4.1 The Gini Coefficient

Although this index is popular for measuring income inequality, it has been suggested as a measure of occupational gender segregation as well (James and Taeuber, 1985; Silber, 1989).

There are various formulae for the Gini Coefficient and they are generally very complicated. We use one of the fairly clear mathematical expressions to describe it.

James and Taeuber (1985) express its as

"$G = \sum_{i} \sum_{j} t_i \, t_j \, | p_i - p_j | / 2T^2 P(1-P)$

Where $|\,.\,|$ denotes the absolute value, T and P are the total population size and proportion of one of the component groups (for instance, the proportion (women) of the total) respectively, and t*i* and p*i* denote the similar values for (occupation) *i*" (James and Taeuber, 1985, p.5).

It is interpreted as follows: the numerator of the Gini index is the weighted mean of the absolute values of all possible differences between (occupations) in the proportion who are women. The denominator equals the maximum possible value for the numerator given the female proportion P. Thus G varies between 0 and 1 for the no-segregation and completely segregated conditions (James and Teauber, 1985, p. 5).

This index is similar to the dissimilarity index, when the occupations are grouped into the two gender categories. When applied to measure inequality of income the Gini index measures the average differences in income shares but when applied to measure segregation the Gini index takes occupations as distributed by the ratio of female to male concentration i.e. the gender distributions of employment are used. Therefore equalizing differences in income reduces inequality but equalizing concentration in occupations do not reduce segregation.

The Gini index satisfies all the criteria proposed by James and Taeuber, namely organisation equivalence, size invariance, composition invariance, and the strong

version of the principle of transfers. In the case of income distribution, transfers from the very rich to the very poor are the most effective way to reduce measured inequality. However transfers across occupations may not be useful in the case of segregation across occupations. It is well explained with the following example taken from Siltanen *et al* (1995) that "when ten women move from occupation (a) to occupation (b), the female percentages of workers in the three occupations change from 82, 78 and 33 per cent to 80, 80 and 33 per cent. This does not affect the level of segregation. If instead of percentages, the figures represented the incomes of the three groups, the move to two values at 80 would be an increase in equality. There is a modest decline in the gini coefficient, which is appropriate for the case of incomes" (Siltanen *et al*, 1995, p.102)

In addition, this index is not generally used in segregation analysis, because of its sensitivity to transfers and its tedious calculation.

5.4.2 Marginal Matching

The existing measures of segregation, such as DI, CI, SR, and WE vary with changes in the gender composition of the work force and changes in the occupational structure. The Marginal Matching (MM) method suggested by Blackburn *et al* (1993) is claimed to be an appropriate measure as it is unaffected by these unwanted effects. Marginal Matching organizes the data to enable measurement of "the extent to which gender and gender occupations vary together - how far female occupations are staffed by women and male occupations by men" (Blackburn *et al*, 1993, p. 349).

For the MM procedure, occupations are ordered from highest to lowest in terms of their female share, therefore the most female dominated occupations are presented first. They produce a 2 X 2 segregation table with the division between 'female' and 'male' occupational categories as shown below (Siltanen, 1995, p.95).

	Men	Women	Total
'Male' occupations	Mm	Fm	M
'Female' occupations	Mf	Ff	F
Total	M	F	N

Where subscript denotes the type of occupation; for instance Fm represents the number of females in the male occupations.

The important point about this table is the symmetry which is established by imposing the cutting (dividing) point between the two groups of occupations so that the number of males in the female occupations are equal to the number of females in the male occupations, i.e. Mf = Fm. "Because of this symmetry, the two differences of proportions coincide and are equal to tau β (the correlation coefficient they use for MM). Given the Matched Marginals Table, the mathematical form of the association statistic for MM may be expressed by:

MM = (FfMm - FmMf) / FM " (Siltanen et al, 1995, p. 95).

Where Mm, Mf, Ff, and Fm, and F, M are the number of men in 'male' occupations, the number of men in 'female' occupations, the number of women in 'female' occupations, and the number of women in 'male' occupations, the number of women in the labour force, and the number of men in the labour force, respectively.

The criticism of MM is made by Watts (1994) on three grounds. Firstly, MM is a version of the Index of Dissimilarity. Secondly, the proof that MM solves the problem of unwanted effects from changes in the gender and occupational composition of employment has not been provided. Finally, although it shows all the appropriate criteria for an adequate measure of segregation, it does not meet the Blackburn *et al*, (1993) criterion of gender occupation invariance nor James and Taeuber's (1985) definition of composition invariance. The algebraic demonstration of these claims is presented in Watts (1994a).

Watts (1994) explains the first point as "several summary statistics now coincide, including phi and tau b, and the Dissimilarity and Standardised Sex Ratio Indexes. The association statistic for MM can be written when restricting occupations to two,

$$MM = (F_1 M_2 - F_2 M_1) / FM$$

$$= [F_1 (M_2 + M_1) - (F_1 + F_2) M_1] / FM$$

$$= F_1 / F - M_1 / M$$

$$= ID^*$$

Where Fi and Mi denote the numbers of female and male employees in the ith group of occupations (i = 1,2) and ID* denotes the amended ID index based on the marginal matching table, as opposed to the segregation table based on male and female dominance" (Watts, 1994, pp. 422-423).

5.4.3 The Karmel and Maclachlan Index

The index was first proposed by Duncan around 1965 in a letter to Taeuber and Taeuber, (1965) and developed and advocated by Karmel and Maclachlan in 1988 (Jones, 1992, p.106). The Karmel and Maclachlan index, KI, measures "the fraction of total employment which would have to relocate with replacement to achieve zero gender segregation, but maintaining the occupational structure of employment and the overall gender shares of employment" (Watts, 1994, p.424).

This index is defined as follows:

$$KI = (1/N)\sum |F_i - a(M_i + F_i)|$$

$$= (1/N)\sum |(1-a)F_i - aM_i|$$

where:

N = number of persons in the labour force

a = the male share in labour force

F_i = number of females in occupation i

M_i = number of males in occupation i

The maximum value of KI depends upon the proportion of females (males) in the labour force.

Decomposition of the Karmel and Maclachlan Index

Karmel and Maclachlan (1988) point out that the change in their index from time 1 to time 2 can be decomposed into Composition and Mix Effects, and also the latter can

be divided into Occupation, Gender, and Interaction Effects (pp. 189-190). Hence, we can examine the changes in the pattern of horizontal occupational segregation by gender.

Decomposition of KI identifies three inter-related indices, which are classified as follows:

$$KI(a) = (1 / N_2) \sum | (1 - a^*) M_{i1} - a^* F_{i1} | (N_{i2} / N_{i1})$$

where $a^* = \sum M_{i1} (N_{i2} / N_{i1}) / N_2$

The subscripts 1, 2 refer to time periods 1 and 2. The index KI(a) is computed by proportionately adjusting the number of males and females in each occupation by the change in the employment level in that occupation from period 1 to period 2, (N_{i2} / N_{i1}). The resulting male share of total employment is shown by a*. Therefore the initial gender composition of each occupation is maintained but the share of total employment in each occupation is adjusted to that prevailing in period 2.

$$KI (b) = (1 / N_2) \sum | (1 - a_2) (M^*_2 / M^*_1) M_{i1} - a_2 (F^*_2 / F^*_1) F_{i1} | = Z_{21} KI_1$$

where $Z_{21} = a_2 (1 - a_2) / a_1 (1-a_1)$.

The index KI(b) is calculated by adjusting the numbers of females (males) in each occupation by the rise in total female (male) employment between the two time periods. Hence the overall gender composition of employment corresponds to period 2, however, the size of occupations will be different from that of period 2.

KI(c) is obtained by successive transformations of the original distribution by the occupation and gender calculations detailed above. Therefore, after each iteration, total employment corresponding to period 2 is gained but, after the odd iterations,

individual occupation totals are realized whereas, after the even iterations, the period 2 gender totals are attained.

When the proportional error is less than 0.025 %, the distribution is said to be converged to an employment distribution with gender total and occupational structure close to those of period 2. The full numerical example can be found in Karmel and Maclachlan (1988: 194).

The interaction of KI_1 which denotes the first year value of the index, and KI_2 which shows the second year value of the index, and KI(a), KI(b), and KI(c) allows us to decompose the change in the index as follows:

The Composition Effect measures the impact of changes in the gender structure of occupations retaining the overall gender and occupational structures constant. In our formula, the composition effect is KI_2 - KI(c).

The Mix Effect determines the impact of changes in the occupational structure and the overall gender distribution. As we mentioned above, this effect is subdivided into the occupation, gender and interaction effects. The mix effect is formulated as:

$KI(c) - KI_1$.

The Occupation Effect shows the impact of changes in the overall occupational structure, and it is written as: $KI(a) - KI_1$.

The Gender Effect indicates the effects of changes in the overall gender composition of the labour force. It is formulated as follows: $KI(b) - KI_1$.

The Interaction Effect is the residual, and is measured as: $(KI(c) - KI_1) - (KI(a) - KI_1) - (KI(b) - KI_1)$. Changes in the occupational structure of employment and the growth rates of male and female employment are interrelated therefore, this effect is useful to define.

The percentages of these effects are computed by multiplying by 100 and dividing by the mean of the index values, such as $(KI_1 + KI_2) / 2$ (Barrientos, 1994, pp.54-55).

It can be observed from our evaluation of indexes that both the conventional (DI, CI, WE, and SR) and the alternative (Gini Coefficient, and MM) occupational gender segregation indexes are flawed and do not satisfy criteria for an adequate index of occupational gender segregation. KI does satisfy the criteria for an adequate index of occupational gender segregation that is made by Watts (1992; 1997a). These are namely, gender symmetry - so its magnitude is not affected by replacing male employment data by corresponding female data and vice versa; organization equivalence - the index is not affected by either the combination of two units (occupational groups) which have an identical pattern of segregation or by the division of a single occupational group into units with the same segregation patterns; size invariance - the invariance of the index when the population is increased proportionately (Watts, 1992, p.476-77). Moreover, KI is simply related to ID as follows:

$KI = 2\ a\ (1\text{-}a)\ ID$

Where a denotes the male share of the labour force.

Thus a consistent pattern of change in the two indexes over the period requires that the overall female share of employment is constant over the period. However, the measurement of occupational gender segregation in Turkey (in section 5) shows that the total values of the KI and the ID indexes display inconsistent movements in Turkey over the period 1975-1990 due to the change in the female share of the labour force. This finding is consistent with that of Karmel and Maclachlan (1988) for Australia over the period 1966-1984).

As was mentioned above, changes in gender and occupational shares of total employment and changes in the gender composition of individual occupations affect the movement of an index of segregation. Therefore an adequate decomposition of an index of occupational gender segregation should purge the effect of the changes in gender shares of total employment and also, the effect of changes in the occupational structure. The Karmel and Maclachlan (1988) index is an appropriate method to measure occupational gender segregation because it produces an adequate measure of the extent and trend of segregation over time. In addition, its decomposition procedure can identify the impact of the composition effect on these changes, picking up the effect of changes in the gender composition of individual occupations. As is known, the analysis of the pattern of occupational gender segregation is not only measured by the composition effect but also by the occupation, gender, and interaction effects as well. Changes in occupational and gender shares of employment affect the movements in the index as well. Therefore KI is superior to other index measures because its decomposition procedure can also identify the Mix Effect which can be broken up into Occupation, Gender, and Interaction Effects. So, by using KI,

we will be able to examine the changes in the occupational structure (Occupational Effect) and the changes in the gender shares of total employment (Gender Effect) as well as the changes in the gender composition of occupations. In sum, KI satisfies the necessary properties for an index of segregation and its decomposition with the isolation of a margin free composition effect.

5.4.4 Segregation within Occupational Groups

The Karmel and Maclachlan approach can be extended to analyse the contribution of the occupational groups (OG) to the overall segregation index (Watts and Rich, 1992; 1993; Watts, 1995; 1998). Watts and Rich (1993, pp.166) show that these calculations are straightforward using the KI index, since it can be written as a weighted sum of the normalised contributions of the individual occupational groups:

$$KI = \sum_{J}(N_J / N) \sum_{j \in J} (|(1-a)M_j - aF_j| / N_J) = \sum_{J}(N_J / N)KI_J \qquad (1)$$
$$= \sum_{J} KI^*_J$$

where KI_J shows the fraction of those workers employed in occupational group J who must relocate to achieve zero segregation across the corresponding occupations, with respect to the overall gender shares, N_J is total employment in occupational group J and KI^*_J denotes the fraction of total employment who are employed in occupational group J and must relocate.

Watts and Rich (1993, pp.176-177) demonstrate that three intermediate indexes, KI_i (i =A, B, C) are computed by Karmel and Maclachlan (pp.190-191) in their decomposition of changes in the index over time. These indexes are also disaggregated by OG, i.e.

$$KI_i = \sum_J (N_{iJ} / N_i)\, KI_{iJ} \qquad (i = A, B, C) \qquad (2)$$

Where N_{iJ}, N_i are the number of employees in OG $_j$ and in total corresponding to the intermediate index i respectively, and KI_{iJ} is the value of the OG index, normalised by its corresponding employment share. The 'forward' percentage composition effect is as follows:

$$CE_J = 100*(KI_{2J} - KI_{CJ}) / ((KI_{1J} + KI_{2J}) / 2) \qquad (3)$$

Where the subscripts 1, 2 indicate the two time periods. The advantage of the normalisation procedure is that the 'forwards' and 'backwards' components of the composition effect are measured in comparable units, namely the shares of OG employment, which must relocate. The failure to normalise both the numerator and denominator of (3) by the corresponding employment shares could lead to one component of the computation being given greater weight, if the OG share of employment changes are significant over time.

However, this normalisation procedure suggests that the weights attached to the composition effects by OG which are required to calculate the overall composition effect are complicated, while in the absence of normalisation,

$$KI = \sum KI^*_J$$

$$CE = \sum w^*_J CE^*_J$$

Where $w^*_J = (KI^*_{1J} + KI^*_{2J}) / (KI_1 + KI_2)$

and CE^*_J is calculated from (3) but is based on raw values of the OG index (KI^*_J). Hence the overall composition effect can be related to the composition effects across OGs.

In addition, as Watts and Rich (1992, p.74) conclude, "the magnitude of the composition effect by OG is relatively insensitive to the way it is calculated, because the normalisation procedure in (3) affects the terms in the numerator equally. Calculations of the total change and the mix effect and its components by OG are highly sensitive to whether index values are normalised, because of the differential impact on the terms in the numerator by normalisation, due to their different OG employment shares". Therefore, in this study, we only present the composition effects by occupational group.

5.5 Occupational Segregation by Gender in Turkey between 1975-1990

5.5.1 The Data

In this chapter, we use the Population census data available from the Turkish State Institute of Statistics (SIS) over the period 1975 to 1990, to estimate the trend in occupational gender segregation. Matching census data are available for the years of 1975, 1980, 1985, 1990 for 80 occupations defined by the International Standard Classification of Occupation, (ISCO), for total (full-time and part-time) employment of those aged 12 years and over (see appendix 1 for the full list of occupations).

We should note that the data provide only the total employment in both public and private institutes, and do not show part-time and full-time employment separately. In Turkey, part-time work is not very common, and both male and female workers generally work eight hours a day in both industrial and service jobs (The World Bank, 1993). Also Ecevit (1991) confirms in her study that "In Turkey, women's part-time work is very rare" (p.61).

The occupations are divided into seven major occupational groups, which are as follows;

1. Scientific, technical, professional and related workers (includes 16 minor occupations).

2. Administrative and managerial workers (consists of 2 minor occupations)

3. Clerical and related workers (includes 10 minor occupations).

4. Commercial and sales workers (includes 7 minor occupations).

5. Service workers (consists of 10 minor occupations).

6. Agricultural, animal husbandry, forestry workers, fisherman and hunters (includes 5 minor occupations).

7. Nonagricultural production and related workers, transport equipment operators and labourers (includes 32 minor occupations).

In this present Chapter, we study only horizontal gender segregation, which occurs when women are disproportionaly represented in major occupational groups. However, vertical segregation by gender, which occurs when women are clustered in lower grade classifications within occupations, was found to be important in explaining wage differences (Treiman and Hartmann, 1981; OECD, 1985). We are not able to examine vertical segregation with this data set, but in the next Chapter we will analyse vertical segregation in one 'organisational' structure, Institutions of Higher Education in Turkey.

5.5.2 Overall View of Employment by Data

Before presenting the empirical results of occupational segregation by gender we will give some descriptions of total employment using the Census population data. As can be seen from Table 1, labour force participation rates of both women and men in Turkey have fallen over the period of 1975-1990, especially for women from 47 % in 1975 to 33.4 % in 1990 (see Chapter 3).

Table 5.1 Labour Force Participation Trends for Men and Women in Total

Year	Men (%)	Women (%)
1975	80.9	47.3
1980	79.8	45.8
1985	78.3	43.6
1990	73.9	33.4

Source: SIS, Population Census data.

Note: 12 years and over.

This decline in female labour force attachment can be explained by several factors. Firstly, while increasing mechanization in agriculture reduced the employment of both males and females it had a greater relative impact on female employment. The decline in the agricultural sector has been accompanied by growth in the industrial and services sector. However, women, the traditional source for unpaid family work in the agricultural sector, are disadvantaged in competition with men for these new jobs. This occurs because women have lower or different educational levels and further, because they are inhibited by culture, tradition and family as was explained in Chapter 3. Secondly, some of the decline in the female participation rate may be due

to social changes like educational ones reflected in the opportunities and the general rise of female enrolments in schools.

As Table 5.2 reveals, women's share of employment varies significantly across the occupational groups. The female share of total employment decreased both in aggregate and in the 'administrative' group over the period 1975-1990. The significant increase in female employment shares among the occupational groups occurred in the 'clerical' sector over the whole period 1975-1990. Although women are reasonably represented in professional jobs (31.2 %), given their overall labour force share, they are under-represented in administrative jobs (7.2 %) in 1990. In Turkey, as noted previously, females have generally been concentrated in the agriculture sector where they work as 'unpaid' family workers.

Table 5.2 Female employment Shares Across Occupational Groups (%)

	1975	1980	1985	1990
Total	35.6	36.0	35.4	34.9
Professional	27.0	30.3	29.4	31.2
Administrative	5.8	5.3	6.0	7.2
Clerical	24.9	32.4	32.2	33.7
Sales	5.8	4.3	5.7	7.2
Service	9.5	7.2	7.9	9.3
Agriculture	47.9	53.6	53.5	54.9
Production	10.3	7.4	7.5	9.5

Source: See Table 5.1.

There has been a decline in the percentage of the labour force in agricultural work, for both genders, over the period 1975-1990 (Table 5.3). The percentage of the female

labour force in agriculture was 74 % as compared with 34 % of the male labour force in 1990.

Big cities in Turkey like Istanbul, and Ankara, experienced large internal immigration starting in the 1950s and intensifying after 1970. Women may withdraw from the labour market after migrating to the cities, becoming housewives, or work at marginal jobs, or contribute to urban unemployment. Ozbay (1995) found that "Women acquired higher status by means of migration from the village; but this was realized, not by shifting from the agricultural to the non-agricultural sector as was the case for men, but rather because there was no longer a need for women's participation in production. The abundance of male labour and the scarcity of non-agricultural work opportunities are the main reason for the ideological disappearance of women's participation in production" (102). Therefore the changing sectoral structure in Turkey has not created a large number of jobs for females.

This is a clear indicator that generally women were clustered in the low-paid agricultural sector. Further, the percentage of the female labour force which was in administrative jobs remained virtually the same and was still very low (see Table 5.3).

Table 5.3 Percentage Distribution of Male and Female Labour force by Sector

	1975		1980		1985		1990	
	Female Per cent	Male Per cent	Female Per cent	Male Per cent	Female Per cent	Male Per cent	Female Per cent	Male Per cent
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional	2.8	4.2	3.7	4.8	3.9	5.1	5.1	5.9
Administrative	0.1	0.6	0.1	1.2	0.1	1.1	0.2	2.2
Clerical	2.1	3.6	3.0	3.6	3.1	3.6	6.5	4.8
Sales	0.5	4.8	0.5	6.2	0.7	6.6	1.7	10.1
Service	0.9	4.7	1.0	6.9	1.2	7.3	3.0	10.5
Agriculture	87.5	52.8	85.6	41.7	84.5	40.2	74.1	34.0
Production	6.0	29.3	4.4	30.7	4.4	29.7	8.1	31.9
Unknown	0.0	0.0	1.7	4.9	2.0	6.3	0.4	0.8

Source: See Table 5.1.

Table 5.4 shows that there has been a rise in total employment during the whole period (1975-1990). The administrative employment grew most rapidly of the occupational groups over the period 1975-1980. However, its growth slowed down in the following periods (1980-1985 and 1985-1990). When mechanization in agriculture increased, employment in agriculture declined and the industrial and services sectors began to increase. This declining trend in the agricultural sector and the increasing trend in the services and industrial sectors, which has been occurring in Turkey over the whole period is consistent with the characteristics of other developed countries. However, as will be explained in next Section, although there has been a growth in the rate of employment of occupational groups, this was not accompanied by increasing integration between genders or decreasing segregation (see Section 5.5.3.1).

Table 5.4 Growth Rates of Employment

	1975-1980 (%)	1980-1985 (%)	1985-1990 (%)
Total	10.5	12.32	14.5
Professional	31.0	20.4	26.7
Administrative	108.5	6.4	40.2
Clerical	21.6	12.7	30.9
Sales	38.9	23.4	34.0
Service	56.4	21.6	28.7
Agriculture	-2.46	9.1	3.7
Production	0.12	9.7	25.7

Source: See Table 5.1.

5.5.3 Estimation of Occupational Gender Segregation in Turkey between 1975-1990

5.5.3.1 Total Occupational Segregation

The computation of occupational gender segregation for total employment is given in Table 5.5 below using KI, DI and the WE index. As we mentioned in section 1 The World Bank Report measured occupational segregation by gender in Turkey using the same data (Population Census data) by applying both the Dissimilarity Index and the Employment index. Therefore, we also include these two index estimates besides the Karmel and Machlaclan index for comparison with the World Bank study.

Table 5.5 Occupational Gender Segregation between 1975-1990

	KI	DI	WE
1975	0.184	0.347	0.446
1980	0.212	0.439	0.562
1985	0.170	0.443	0.572
1990	0.221	0.418	0.573

Source: See Table 5.1.

Notes: 80 occupational groups' data are used.

The KI, DI and WE estimates demonstrate that occupational gender segregation increased over the whole period 1975-1990 in Turkey. However these three indexes show different trends. For instance, the DI estimates show that occupational gender segregation between 1975 and 1985 increased, but declined by 1990. Also the WE estimates reveal that occupational segregation by gender rose gradually over the whole period, although there was only a very slight increase between 1985-1990. According to the KI estimates, there was a significant increase in the overall level of occupational gender segregation in Turkey from 1975 to 1990, although there was a decrease in segregation between 1980-85. As was explained in Section 2, the gross index of gender segregation should be margin free, so that the index should not be directly affected by the total numbers of men and women in the employment and the occupational structure. However, the changes in the measured level of segregation according to the WE and the DI indexes do not show the true movements of segregation because they are affected by changes in employment patterns. Also, as was noted previously, the broad occupational groupings, which were used by the World Bank for Turkey, tend to underestimate the degree of occupational gender segregation.

The pattern of occupational segregation is investigated in three sub-periods with the available and most appropriate population census data set. The first period (1975-80) shows an increase, the second period (1980-85) displays a sharp decline in gender segregation, and the third period (1985-90) shows a renewed increase in estimates of occupational gender segregation. In addition the whole period which is 1975-1990 will be examined to show how segregation changed over the whole period.

The results of the decomposition of the Karmel and Machlaclan index are presented in Table 5.6. The computation of the decomposition of KI reveals that, occupational segregation by gender for the 80 minor occupations shows an increase over the whole period (as denoted by TCH). Only during the period 1980-1985 was there an improvement in the occupational integration of the genders. The figures in Table 5.6 reveal that the number of people who needed to relocate jobs to achieve zero segregation would have been 22.1 % in 1990, as compared to 18.4 % in 1975. The composition effect shows that segregation across the 80 occupations increased (+19.39 %) and was high. Also the composition effect's share is larger than the mix effect in the total percentage change of the index.

Table 5.6 Decomposition of Karmel and Maclachlan Index for Total Employment

	KI(1)	KI(2)	TCH (%)	COMP (%)	MIX (%)	OCC (%)	GEN (%)	INT (%)
1975-1980	0.184	0.212	14.47	23.12	-8.64	10.02	22.70	-41.3
1980-1985	0.212	0.170	-22.22	-19.84	-2.38	-22.04	-24.04	43.7
1985-1990	0.170	0.221	26.28	13.36	12.91	27.98	23.14	-38.21
1975-1990	0.184	0.221	18.55	19.39	-0.85	13.36	21.79	-36.00

Source: See table 5.1.

Notes: The first and final years of calculations are denoted by subscripts 1 and 2. TCH indicates the total percentage change in the index over the two years. COMP and MIX denote the percentage Composition and Mix effect respectively. Mix is subdivided into Gender (GEN), Occupation (OCC) and Interaction (INT) effects.

This indicates that the main reason for the increase in the level of segregation in Turkey was the increase in the gender composition of individual occupations (net segregation), instead of changes in the occupational structure (OCC) or the gender composition of the labour force (GEN). However, the negative composition effect over the period 1980-85 indicates that individual occupations became more integrated for a short time.

The negative mix effect for the period 1975-1990, and 1975-1980 is dominated by the interaction effect. This shows that changes in the occupational structure and female rates of employment did not affect occupational segregation as much as the change in the gender composition of occupations.

Watts and Rich (1992) noted that "the industrial, and therefore the occupational structure of employment is subject to long-term forces as noted in the literature on post-industrial economies, which should be captured by the occupation component of the mix effect" (Watts and Rich, 1992, p.294). However, in the case of Turkey, the evidence is not clear because the interaction effect dominates the occupation effect over the period 1975 to 1990.

Moreover, it is believed that net growth of employment is associated with the rate of job separation because the existence of growing employment opportunities would favour job mobility. Therefore when there is increasing net employment growth, it can be expected that the occupational integration of male and female workers would take place because net growth of employment would facilitate the change in gender composition of employment across the occupations (Watts and Rich, 1993, p. 168). However, in the case of Turkey, although there was growth in the rate of employment, it was not accompanied by decreasing segregation and increasing integration between the genders. This is most likely explained by the reasons mentioned previously (see Section 5.5.2).

Looking at the period 1980-1985, the KI index shows that by 1985, only 17 percent of total employees would have had to change jobs in order to eliminate occupational gender segregation. This level of segregation was the lowest recorded over the various years. It indicates that females had greater work opportunities and they could compete with males more equally over the years 1980 to 1985. The composition effect indicates that there was a decline in net segregation and this was the most important component in the whole change. In addition, the female change in the share

of employment (GEN) is interrelated with changes in the occupational structure (OCC) as the interaction effect (-38.2 %) reveals.

The decline in the gross level of segregation between 1980-1985 is consistent with the statistical analysis of the gender wage gap reported in Chapter 4. It has been observed that wage differentials had been relatively lower between men and women during the years 1982 to 1984. Therefore the reasons behind the decline of gender segregation could be as follows. After the military coup in 1980 in Turkey a new constitution was implemented in late 1982 and discrimination by gender was forbidden. It is worth noting that, during the period 1980 to 1985 the military junta was quite effective therefore it might have forced Turkish society to implement their rules (Tekeli, 1995). The effect of the new constitution was that women would be treated more equally in the labour force. Also another reason could be that, although there is no reference to this issue in recent economic analyses of Turkish labour market, the data may have been manipulated in these period to show there was no differential treatment on the basis of gender in the country.

Moreover, as can be seen from the decomposition of KI in Table 5.6, the negative composition effect revealed that occupational integration occurred between 1980 to 1985. The overall decline in segregation was boosted by the negative gender effect (-24 %) and occupational effect (-22 %). When the new political party came to power in 1983, ultra-liberal economic policies were pursued and Turkish industrialization strategy changed from import-substitution to export orientation. There was a significant increase in the production of the industrial sector and in the economy in the beginning followed by stagnation (see Chapter 3). Therefore in the early stages of

the implementation of these policies the economy was growing and new job opportunities appeared, so more females entered employment (as well as males).

On the other hand the figures in Table 5.6 indicate that more people needed to change jobs in order to eliminate segregation in 1990 than in 1985. The decomposition of the KI index reveals that the combination of changes in the occupational structure and the share of women in the labour force had contributed to increasing the level of segregation in employment (as shown by the mix effect of 12.9 %). A composition effect of +13.36 % was calculated.

In Turkey, there are a number of reasons that would create and maintain gender segregation in occupations, such as the legal environment as well as economic (high unemployment rate) and social (traditional beliefs and norms) factors.

As we indicated in Chapters 3 and 4, on the one hand, although the the principle of gender equality and the prohibition of gender discrimination is contained in the Turkish Constitution, and reinforced by international agreements such as the Convention on the Elimination of Discrimination Against Women (CEDAW), on the other hand, conflicting articles are encountered in the Law. This includes specifying that the husband is the head of the family, with the main responsibility to feed the family and that a woman's place of residence is her husband's place of residence (the Civil Code, Articles 152 and 153) (see Chapter 3). Legislation and traditional social beliefs on the role of women may reinforce each other so that women may be less mobile than men and enter subordinate, low status, and low pay jobs.

Furthermore, there are some discriminatory articles in labour law which prohibit women from undertaking dangerous work and working at certain hours. These would reinforce occupational segregation by gender. Due to such laws, women's educational and work choices are constrained (see Chapter 3).

Another reason for increasing and persistent segregation could be cultural and social factors. As was mentioned in Chapter 2, the cultural and social norms regarding a women's place generate and perpetuate occupational segregation. Ecevit (1991) noted that "women's gender-ascribed characteristics and supposed personality traits play a significant role in their allocation to certain jobs and in their being subject to patriarchal control" (p.76).

5.5.3.2 Occupational Groups Segregation

The result calculated for occupational groups using the modified KI are presented in Table 5.7. Using the ISCO standards, total employment is categorised into seven occupational groups. The occupational group (OG) values for KI are adjusted by normalising each OG's value to show the contribution of each occupational group to total segregation (see Section 5.4.5). The Production, Sales, and Services groups are the most segregated, followed by the Administrative, Agriculture, and Professional occupational groups.

Table 5.7 Total Employment Shares and Normalised Index Values for Occupational Groups.

	1975		1980		1985		1990	
	Share	KI_J	Shares	KI_J	Share	KI_J	Share	KI_J
Professional	0.036	0.121	0.045	0.105	0.050	0.130	0.055	0.143
Administrative	0.004	0.298	0.008	0.314	0.008	0.310	0.010	0.288
Clerical	0.030	0.132	0.035	0.113	0.036	0.118	0.041	0.105
Sales	0.032	0.298	0.042	0.325	0.031	0.317	0.056	0.288
Service	0.033	0.269	0.049	0.300	0.052	0.302	0.061	0.275
Agriculture	0.652	0.126	0.597	0.171	0.598	0.167	0.538	0.191
Production	0.209	0.272	0.220	0.316	0.222	0.305	0.237	0.295

Source: See Table 5.1

The Production, the Administrative, the Sales and the Services groups make the largest contribution to the segregation index, normalised by their corresponding employment shares, followed by the Clerical, Agriculture, and the Professional occupational groups. For instance, in 1990, 29.5 % of the Production workforce needed to be relocated to achieve a structure of employment across these occupations, consistent with the gender shares of overall employment, as compared with 14.3 % of the Professional group.

The net segregation for the seven occupational groups is reported in Table 5.8. During the period of 1975-1990, the Professional and the Agriculture occupational groups showed the fastest decline in the net segregation (composition effects of -6.11 %, and –2.90 %, respectively). On the other hand, the Clerical and the Production occupational groups (10.31 %, and 8.92 %) contributed to increasing net segregation followed by the Services (2.90 %), and the Sales (1.39 %) groups.

The integration of female and male employees across all occupational groups except Agriculture occurred over the period of 1985 to 1990. However, while the employment share of agricultural work decreased, its contribution to segregation increased between 1975 to 1990 (see Table 5.7, KIj: 0.126 and KIj:0.191). In addition, although its share of employment has declined to 50 % of employment women are still generally working in this sector as an unpaid family worker, and more so than men are.

The lowest female employment share in the Production sector can be explained by factors such as tradition, social customs and protective legislation. In addition it was found that the Production group made the highest contribution to the overall level of segregation as calculated by the modified KI. Also the fastest rate of increase in net segregation, as measured by the composition effect, occurred in this sector. As in Chapter 3, employers may discriminate against females in the hiring process because of the belief that women are not suitable for heavy or mechanical jobs. This may have caused the segregation in this production sector.

As was demonstrated in Table 5.2 in Section 5.5.2 women were under-represented in Administrative jobs such as legislative officials, government administrators, and managers, where decision-making is concentrated (DGSPW Report, 1994). Although the highest rate of growth was recorded for this occupational group during the period 1975 to 1990 (see Table 5.4), it was not accompanied by integration between the genders. This shows that women were disadvantaged in access to jobs in the

decision-making arena and power base, despite the fact that women's participation in political decision-making is very important for furthering the gender equality process.

Table 5.8 Percentage Composition Effects for Total Employment and Occupational Groups

	1975-1980	1980-1985	1985-1990	1975-1990
Total	23.12	-19.84	13.36	19.39
Professional	-14.07	13.22	-6.43	-6.11
Administrative	3.74	0.76	-3.27	1.39
Clerical	15.1	-1.81	-9.28	10.31
Sales	3.68	0.85	-3.36	1.39
Service	6.44	3.59	-8.52	2.90
Agriculture	-7.77	-1.69	5.49	-2.90
Production	9.56	-2.98	-0.58	8.92

Source: Population Census Data, SIS.

The Sales, Services and the Clerical sectors can be said to be segregated. Although these are the growing sectors of employment in Turkey recently, they did not create new job opportunities for women. Women were at a disadvantage in competition with men for jobs because their education level and labour force qualifications were restricted by tradition, culture and family. Also, men were more mobile and able to take up new jobs in different regions in contrast to women, who were dependent on their husbands.

The Professional and Agricultural occupations showed the fastest rate of integration. The decline of segregation in agricultural occupations may have resulted from the

general decrease in the employment share of this sector. In addition, the Turkish economy has experienced large transformations from agriculture to industry and services therefore this changed employment structure affected the decline of segregation in Agriculture. In Turkey, agriculture had the lowest paid jobs with no job security, and career advancement, (see Chapter 3) therefore the decline in net segregation over the whole period was very beneficial for women.

Moreover, the results of better integration in the Professional occupational group over the period of 1975-1990 are similar to results that were found in Australia and Britain by Watts and Rich in 1992 and 1993 respectively. The faster decline in segregation in these areas is, most likely, due to several factors. Women can compete more equally with men in these professional jobs, because the training for these jobs is generally taken on outside the labour market (Watts and Rich, 1993, p.171). Moreover, entry into higher education depends on examination scores in Turkey, thus statistical discrimination by employers may not be as prevalent as in other occupations which do not require higher education qualification. Also, women who have education and qualifications are more likely to be aware of legislative changes in favour of them and they may be more active in pursuit of their legislative rights.

5.6 Conclusion

The results of the Karmel and Machlaclan index for total employment for the whole period of 1975-1990 reveals that there has been increasing and sustained occupational segregation in Turkey. However, between 1980 and 1985 there was a decline in segregation.

The KI decomposition gives a more detailed picture of the change in the level of segregation over this period. According to the results, the main reason for the increase in the level of segregation was the increase in the gender composition of individual occupations rather than the changes in the occupational structure or the gender composition of the labour force. Although there is some anti-discrimination legislation like the 1982 Constitution and CEDAW (1985), they do not seem to have had much impact over the whole period.

The estimation of KI for each occupational group demonstrates that the Production, the Sales and Services, the Agriculture, and the Professional, occupations are the most segregated groups. However, net segregation, measured by the Composition effect, reveals that the Professional, and the agricultural occupations have had the fastest rate of integration due to reasons that were explained above.

These results suggest that women's exclusion from certain jobs because of employer's hiring decisions arising from 'statistical discrimination', the law, tradition, social and/or cultural reasons may cause occupational gender segregation in Turkey.

In this Chapter only the period between 1975 and 1990 was examined using the decomposition of the KI index, because of the available data. Since 1990 further anti-discrimination action has been introduced, such as the establishment of the new Directorate General on the Status and Problems of Women (DGSPW) and the creation of a new, 1990, separate Ministry of State for Women in 1991. These aim to improve women's status and promote their full integration into the economy. However, we cannot measure the effect of this latest anti-discrimination legislation and its

implementation for Turkey as the most suitable data for this study were the Census Population data and the next Census Population will not take place until the year of 2000.

5.7 Appendix 1

Scientific, Technical, Professional and Related Workers: Physicists, chemists and related workers, Architects, engineers and related technicians, Aircraft and ship officers, Life scientists and related technicians, Medical dental veterinary and related workers, Statisticians, mathematicians, systems analysts and related technicians, Economist, Financial counsellors and accountants, Jurists, Teachers, Workers in religion, Authors, journalists and related writers, Sculptors, painters photographers and related creative artists, Composers and performing artists, Athletes, sportsmen and related workers, Professional, technical and related workers etc.

Administrative and managerial workers: Legislative officials and government administrators, Managers.

Clerical and related workers: Clerical supervisors, Government executive officials, Stenographers, Typists and card and tape punching machine operators, Bookkeepers, cashiers and related workers, Computing machine operators, Transport and communication supervisors, Transport conductors, Mail distribution clerks, Telephone and telegraph operators, Clerical and related workers etc.

Sales workers: Managers (Wholesale and retail trade), Working proprietors, Sales supervisors and buyers, Technical salesmen, commercial travelers and manufacturers agents, Insurance, real-estate, securities and business services salesman and demonstrators, workers etc.

Service workers: Administrators of hotel, café, place for gambling restaurant, casino, pastry-shop, cinema, theatre and related situations, Administrative and managerial owners of hotel, café, place for gambling, restaurant, casino, pastry-shop, cinema, theatre and related situations, Housekeeping and related service supervisors, Cook waiters bartender and related workers, Maids and related workers, Building caretakers, char workers cleaners and related workers, Launderettes dry cleaners and pressers, Hairdressers, barbers, beauticians and related workers, Protective service workers, Workers etc.

Agriculture, animal, husbandry and forestry workers fisherman and hunters: Farm managers and supervisors, Farmers, Agricultural and animal husbandry workers, Forestry workers, Fisherman, hunters and related workers.

Production and related workers, transport equipment operators and labourers: Production supervisors and general foremen, Miners, quarrymen well drillers and related workers, Metal processors, Wood preparation workers and paper makers, Chemical processors and related workers, Spinners, weavers knitters dyers and related workers, Tanners, fellmongers and pelt dressers, Food and beverage processors, Tobacco preparers and tobacco product makers, Tailors dressmakers sewers upholsterers and related workers, Shoemakers and leather goods makers, Cabinetmakers and related wood workers, Stone cutters and carvers, Blacksmiths toolmakers and machine-tool operators, Machinery fitters, machine assemblers and precision instrument makers (Except electrical), Electrical fitters and related electrical and electronics workers, Broadcasting station and sound equipment operators and cinema projectionists, Plumbers sanitary installation, tin and copper

workers, metallic pipe mounters, Goldsmiths and jewelers, Glass and glass products ceramic and earthen ware workers, Plastic and rubber material workers, Paper, paper-board and binding material workers, Compositors printers binders and related workers, House painters and white washers, Not else where classified production and related workers, Master builder, carpenter and other construction workers, Fixed installment machinery operators, Loading and unloading workers and construction equipment operators, Transport equipment operators, Unskilled workers etc. workers not classifiable by occupation or not reporting any occupation.

Source : SIS, (1984), 1980 Population Census data, Ankara.

5.8 Appendix 2

All Results for index Computation of Occupational Groups

OGs	KI 1975	KI 1990	Mix	Occ	Gen	Int	Comp	Tch
Profess	.121	.143	22.21	6.84	12.46	2.90	-6.11	16.09
Administ	.298	.288	-4.90	2.00	-4.90	-2.00	1.39	-3.50
Clerical	.132	.105	-32.90	-2.58	-41.35	11.02	10.31	-22.59
Sales	.298	.288	-4.51	-7.71	-4.51	7.71	1.39	-3.11
Services	.269	.275	-.76	-1.18	.51	-.09	2.90	2.14
Agricul	.126	.191	43.89	-.70	43.16	1.43	-2.90	40.99
Product	.272	.295	-.93	-1.33	.31	.08	8.92	7.98

OGs	KI 1975	KI 1980	Mix	Occ	Gen	Int	Comp	Tch
Profess	.121	.105	-.22	-7.77	5.06	2.48	-14.07	-14.30
Adminst	.298	.314	1.38	.72	1.38	-.72	3.74	5.13
Clerical	.132	.113	-30.25	-.79	-34.44	4.98	15.10	-15.14
Sales	.298	.325	4.98	-2.87	4.98	2.87	3.68	8.67
Services	.269	.300	4.62	-.47	5.46	-.36	6.44	11.06
Agricul	.126	.171	38.14	-.87	36.44	2.57	-7.77	30.36
Product	.272	.316	5.23	1.33	3.69	.20	9.56	14.80

OGs	KI 1980	KI1985	Mix	Occ	Gen	Int	Comp	Tch
Profess	.105	.130	8.22	8.05	-4.08	4.25	13.22	21.45
Administ	.314	.310	-2.06	.61	-2.06	-.61	.76	-1.30
Clerical	.113	.118	5.55	.19	.72	4.63	-1.81	3.73
Sales	.325	.317	-3.22	13.85	-3.23	-13.84	.85	-2.37
Services	.300	.302	-2.99	1.03	-2.54	-1.48	3.59	0.60
Agriculture	.171	.167	-1.09	.30	-.62	-.77	-1.69	-2.79
Product	.316	.305	-.56	-.44	-.15	.03	-2.98	-3.55

OGs	KI 1985	KI 1990	Mix	Occ	Gen	Int	Comp	Tch
Profess	.130	.143	15.35	4.74	5.87	4.73	-6.43	8.91
Administ	.310	.288	-4.07	.37	-4.07	-.37	-3.27	-7.34
Clerical	.118	.105	-1.95	1.31	-6.66	3.40	-9.28	-11.24
Sales	.317	.288	-6.05	-18.44	-5.83	18.22	-3.36	-9.41
Services	.302	.275	-.99	-2.09	-1.94	3.04	-8.52	-9.52
Agricult	.167	.191	8.25	.01	8.38	-.14	5.49	13.75
Product	.305	.295	-2.69	-2.17	-1.35	.83	-.58	-3.28

Source: See Table 5.1.

CHAPTER 6

THE MEASUREMENT OF GENDER

SEGREGATION IN TURKISH ACADEMIC INSTITUTIONS

6.1 Introduction

One of the explanations for the existence of sustained wage differences between men and women is continuing occupational segregation, as was indicated in Chapter 5 of the present study. The study, in the previous Chapter, of horizontal occupational gender segregation in the Turkish labour market over the period 1975-1990 reveals a pattern of increased and maintained occupational gender segregation.

Horizontal occupational segregation, which exists when men and women are separated into <u>different</u> occupations has, in general, been studied using aggregate occupational data sets because this economy-wide employment data is usually readily available. These data sets are generally based on a classification of occupations by skill rather than hierarchy. In the Turkish case, except for institutions of higher education, it is not possible to obtain data on the hierarchical gender distribution <u>within</u> occupations. Such data are required to investigate <u>vertical</u> occupational segregation, which occurs when, within an occupation, women are disproportionately centred in the lower level jobs and men are disproportionately centred in the higher level of jobs.

On the other hand, some researchers have analysed vertical occupational segregation within the organisational structure using data based on establishments in the US (Bielby and Baron,1984; Horan and Lyson, 1986).

Rich (1999) examined vertical occupational segregation in universities in Great Britain using the Karmel and Machlachlan index. In the present Chapter, we will investigate vertical occupational segregation within the Turkish Higher Education Institutions, again using the Karmel and Maclachlan index (KI).

Universities vary according to their faculty composition, or academic organisational unit, or cost centre, and the faculties may vary according to their gender composition. Therefore it is not appropriate to analyse aggregate data by university. Faculties are weighted differently within the university sector, and then would make the calculations unreliable. To avoid this problem, and to get more reliable results, we examine vertical occupational gender segregation in the 40 faculties within the higher education institutes in Turkey. We will apply the KI index, over the academic years 1988/89 to 1997/98 using the available compatible data sets provided by Higher Education Statistics (HES).

We also investigate occupational segregation for each faculty based on the gender share of that faculty's employment, using KI index during the 1988/89-1997/98 academic years, to see if there were any differences among them in the form of unequal treatment, or any changes in the pattern of occupational segregation by gender over the period. In addition, the contribution of the faculties to the overall level of segregation in the university sector will be calculated for the same period.

The remainder of this Chapter is as follows; in section 2, the historical and sociological background of Turkish academic women's participation is explained. In section 3, characteristics of academic employment are explored using the available data. The vertical occupational gender segregation in academia is then estimated between 1988/89 – 1997/98 using the Karmel and Machlaclan index. The final section draws conclusions.

6.2 The Historical and Sociological Background of Womens' Participation in Academia

Before analyzing the situation of women in academia, the impact of some sociological and historical factors needs to be taken into account. As was explained in Chapter 2, after the First World War, the new Turkish Republic was established by Mustafa Kemal Ataturk, and many reforms were enacted to improve social and political conditions in the country. In particular, women received great priority during this modernising and Westernisation process. Acar (1991) points out that "the newly structured universities designed to reflect the image of modern Turkey emerged as particularly suitable media for operationalising the ideals of the Republic regarding women. Under these circumstances daughters of middle- and upper-class urban elite families who identified with Kemalist ideals benefited not only from the material advantages of their social background – which made it possible for them to receive advantaged education and often facilitated their pursuit of a career by enabling them to hire household and childcare help but also from the supportive and legitimising values of the elite subculture in which they were raised" (p.150).

According to two different studies on women in higher education (Acar, 1983; Koker, 1988) academic women generally come from urban upper or middle class backgrounds and are very motivated in their career goals. This was ascribed to the influence of the family socialisation of women.

In the early years of the Turkish republic, the highest female share of academic employment was found in the natural sciences. For example, in 1947, 44 % of the academic staff of the Faculty of Natural Sciences were female, on the other hand only 22 % of the Humanities faculty were female, which is in marked contrast to the developed-western countries, such as the United States, and the United Kingdom (Koker, 1988).

The existence of Turkish women in natural sciences, which are generally male-dominated fields in developed countries, can be explained by several factors. Firstly, it may be due to the new Republican State's positivist ideology; it glorified 'hard'science vis-à-vis social sciences and humanities. Therefore women who were socialised in the elite subculture were consciously oriented towards natural sciences and mathematics, which were the dominant ideological discourse (Acar, 1991, p.151). Secondly, it may be the case that in developing countries the links between academic science and real power are weak contrary to developed countries (Ruivo, 1987). In the early years of the Republic, women may have been excluded from the real sources of power and supported and encouraged to choose natural sciences, rather than law and political sciences, which were connected with the state and the commanding targets of political power in Turkey.

After the 1950s, when the Kemalist message and political ethos started to lose their effectiveness and, as a result of this, women's participation in the natural sciences decreased considerably. On the other hand female participation in social sciences began to increase. By 1998, 49 % of academics in the Humanities and 46 % in Fine and Applied Arts were females.

When the effectiveness of early republican policies somewhat diminished in society, the ideological activation of elite women in science lost its motivation (Oncu, 1981). In addition, after the 1950's the country experienced great social mobility, thus elite women came across more competition from men of lower socio-economic origins than before. Consequently women may have seen their preferred status of entry to academia diminished (Koker, 1988).

As well, Acar (1991) reveals that "most women coming into the system in the 1960's and 1970's were less ideologically motivated. Some were more influenced by the 'traditional values of society, many were more likely to choose a field that is associated with a well-paying profession, and all had to face tougher competition from men" (p.156). Recently, although more and more women are entering the academic sector (as well as men), due to the diffusion of educational facilities, women's choice of fields has changed from the natural sciences to the fields traditional in the west, such as the humanities, arts, vocational education. It will be shown in section 6.4.2 that these observations are consistent with our finding on occupational gender segregation in faculties for the period 1988/9 to 1997/98.

It also needs to be mentioned that, according to the latest data, about 76.9 percent of all academic women are employed in the metropolitan universities namely Ankara, Istanbul and Izmir (OSYM, 1998). Acar's (1983) report interviewing women in academia indicates that the relationship between gender, academic level, and administrative power differs between those universities, which are new provincial or those which are metropolitan. The women in new provincial universities are younger, junior and disadvantaged in competition with men of similar status, compared with women in the well-established universities in Ankara, Izmir and Istanbul. This may be due to the fact that, as would be expected, patriarchal values are more compelling in provincial (traditional) locations. In addition, women's lower geographical mobility affects their participation in provincial universities. As was pointed out in Chapter 3, this outcome is consistent with our observation of the different situation of women in Turkey, where those from the major cities are highly educated and professional and face relatively fair equal treatment. On the other hand, in small provincial cities (rural areas), women's situation is more determined by culture, tradition and religion which restrains their activities and situations.

6.3 Academic Employment Characteristics

In Turkey, the higher education institutions contain all the institutions under the jurisdiction of the Higher Education Council (HEC) namely: universities, faculties, higher technology institutes, higher schools, vocational schools, evening universities, conservatories and research centres, which are subject to the Higher education Act of 1981. The data on Turkish Higher Education institutions do not record two distinct labour markets such as academic and non-academic employment. The data are available only for academic employment, therefore, although there are non-academics

employed in academia, in this study, we are only concerned with academic employment.

Turkey has a very young population and is a developing country, so educational expansion is required at every level. After a major reorganisation of the Turkish higher education system in 1981, many new universities were established; both state and private. For instance in 1992, 23 new state universities were founded in addition to 28 existing universities –one private, the rest state. Currently there are 67 universities both private and public in Turkey.

Total academic employment (56401 persons) represented 0.026 % of total employment in Turkey and women were 33 % of total academic employment in the 1997/98 academic year. Approximately 73 % of academics was employed in the faculties which are examined here (1998).

Of the 41667 academics in Turkish universities, approximately 19000 (34 %) are female (1997-1998 Higher Education Statistics). However, academic women are highly underrepresented in senior administrative posts. For example, throughout the history of the universities, there has been only one elected and one appointed woman rector. Also, in the 1993/94 academic year, only 8.6 % of the 325 faculty deans in the 52 universities were women (DGSPW, 1994).

Table 6.1 shows the distribution of females and males in total academic employment. Women's proportion of total academic employment has slightly increased since 1985 (29.7 % in 1985 compared with 33.8 % in 1998). By 1998, female professors represented 2.96 percent of total academic employment compared with 10.47 percent

for males. Although males, lecturer and above, represented approximately 35 percent of total academic employment in 1997/98 females at these levels only represented approximately 13 percent of total academic employment in the 1997/98 academic year. As is seen, women are generally employed in support positions, which lack promotional opportunities, such as language instructor, or specialist.

Table 6.1 Distribution of Academic Employment (%)

Academic Status	1984/85		1997/98	
	Male	Female	Male	Female
Total	70.23	29.77	66.61	33.8
Professor	7.26	1.13	10.47	2.96
Associate Professor	10.10	2.61	5.13	2.20
Assistant Professor	8.6	2.74	9.61	3.78
Lecturer	13.44	5.66	9.58	4.51
Language instructor	2.81	3.82	3.78	4.34
Specialist	1.65	1.21	2.25	1.51
Research Assistant	26.20	12.30	25.31	14.44
Other*	0.08	0.05	0.03	0.02

Source: OSYM, 1998, 1984/85–1997/98 Academic Years Higher Education Statistics.
* = Comprises Translator and Education and Training Planner

As is shown in Table 6.2 percentage of females and males who are professors has increased by 50 % between 1984/85 and 1997/98. However there has been a decline at the level of associate professors for both sexes, especially for males (from 14.3 % in 1985 to 7.7 % in 1997/98). Currently the largest proportion of female academics is at the level of research assistant (42.7 %) compared with 38.2 % for men.

Acar (1991) explains the proportion of women in lower status positions as follows: "two factors may be thought to contribute to the present concentration of women in the lower echelons. One of them is the entry of more women into the academic world than men in the recent decades; this is readily observed in the increasing share of

women throughout the past decades. An alternative explanation may be sought in the slower promotion rates of women" (Acar, 1991, p.153).

Table 6.2 Percentage Distribution of Academic Employment by Gender (Total for Turkey)

Academic Status	1984/85		1997/98	
	Male	Female	Male	Female
Total	100.0	100.0	100.0	100.0
Professor	10.3	4.5	15.8	8.7
Associate Professor	14.3	8.7	7.7	6.5
Assistant Professor	12.3	9.2	14.5	11.1
Lecturer	19.1	19.1	14.4	13.3
Language instructor	4.0	12.8	5.7	12.8
Specialist	2.3	4.0	3.4	4.4
Research Assistant	37.3	41.3	38.2	42.7
Other*	0.12	0.19	0.04	0.07

Source: See Table 6.1

* = Comprises Translator and Education and Training Planner

Koker (1988) and Acar (1983) report on the basis of interview data for the Turkish academic women, that a discrimination mechanism grounded on patriarchal values in society, and social and cultural pressures creates a role incompatibility between family and careers responsibilities. In addition psychological factors that influence women's own self-images reinforce social pressures to confine the development of women's careers. Women interviewed in Acar's (1983) study recognized that they lowered the standards of performance in their careers because of the demands of their family roles.

Table 6.3 demonstrates that female academic employment has grown 191 % over the period 1984/85 – 1997/98, compared with 142.2 % for male academic employment. The highest growth has been at the professional level for both genders. There has been a small increase in the female growth rate in translator and education and

training planners level. On the other hand, there has been a fall in male growth rates at these levels. As can be seen, generally, the females show a higher growth rate than males in academic employment. This is a reflection of the general increase in participation of women in the Turkish Workforce. Ozbay (1995) points out that after the 1980s, some male professors resigned and sought jobs in the private sector because the salaries in the academic sector were so low (Ozbay, 1995, p.104). Therefore, with men less likely to apply for these jobs, females did not face such strong competition. Applications by women to new positions in the universities were greater than applications by men recently. It is significant that this result is consistent with the theory of queueing processes, which was suggested by Reskin and Roos (1990) as discussed in Chapter 2 above. The factors such as custom, prejudices, working conditions, autonomy, which affect employers' ranking of workers within labour queues and workers' ranking of occupations within job queues, determine the occupations' gender compositions. In other words, the preferences of employers and male workers decide how the gender composition of an occupation is changed. In our case, when the earnings of the university sector declined, men preferred to find better opportunities elsewhere and then women had opportunities to enter this sector. Likewise, Power (1975) claims that the feminisation of an occupation tends to be self-reinforcing, in the sense that the associated decrease in pay, or status and also conditions discourages male entry (Power, 1975, p.234). This is consistent with this Turkish case.

Table 6.3 Growth Rates of Academic Employment for Total and Each Level by gender, 1984/85-1997/98 (%)

Academic Levels	Female	Male
Total	191.6	142.2
Professor	465.5	270.4
Associate Professor	116.1	30.7
Assistant Professor	254.3	185.2
Lecturer	105.0	83.3
Language instructor	191.6	245.7
Specialist	219.8	250.1
Research Assistant	201.7	148.2
Other*	7.6	-10.5

Source: See Table 6.1

* = Comprises Translator and Education and Training Planner.

Table 6.4 shows the percentage female employment shares across faculties over the year 1988/89 and 1997/98. Generally women's shares increased in all faculties, except engineering and marine sciences, and those higher education units without students, where centers for application and research take place. Recently women's highest shares were found in the faculties of vocational education, pharmacy, educational sciences and letters (90 %, 70 %, 55 % and 49 % in 1997/98 respectively). On the other hand, the lowest female shares were in theology (2 %), technical education (10%), aeronautics and space sciences (14 %) and engineering (15 %). They are fields where tradition acts to limit female involvement. The most noticeable increases in women's participation over the period 1988/89 – 1997/98 were in vocational education (from 71 % to 90 %), languages and history (from 36 % to 46 %) and communication (from 43 % to 50 %), which are considered more feminine fields.

As is noted earlier, although the highest share of academic women was in the engineering and natural sciences in the early years of republic, due to the sociological

factors the distribution of women in these fields has decreased significantly after the 1950s. Recently women were found generally in more 'feminine' fields such as the vocational education, letters and educational sciences. In Turkey chemist is generally considered to be a female job therefore a large amount of academic women were found in the pharmacy (70 % in 1997/98).

The largest representation of academic women (90 % in 1997/98) was in the vocational education, which is intended to provide female students with the traditional 'female' occupational skills, such as the home economics. However, technical education, which has only 10 percent of women in its labour force is designed to provide male students with the conventional typical 'male' specific occupations such as electronics and carpentry. This shows how the male and female specific fields are separated in the society.

Table 6.4 Female Employment Shares of Faculties, (%)

	1988/89	1997/98
Aeronautics & Space Sciences	12.0	14.0
Agriculture	18.0	21.0
Architecture	44.0	52.0
Arts & Sciences	30.0	31.0
Chemistry & Metallurgy	30.0	39.0
Civil Engineering	23.0	23.0
Communication	43.0	50.0
Economics	31.0	34.0
Economics & Administrative Sciences	27.0	26.0
Education	30.0	31.0
Educational Sciences	50.0	55.0
Electrical & Electronic Engineering	20.0	23.0
Engineering	23.0	22.0
Engineering & Architecture	20.0	25.0
Fine Arts	36.0	38.0
Fish & Fisheries	22.0	29.0
Forestry	8.0	16.0
Higher Education Units without Students	50.0	47.0
Languages, History & Geography	36.0	46.0
Law	28.0	30.0
Letters	45.0	49.0
Management	26.0	35.0
Marine Sciences	28.0	16.0
Mechanical Engineering	6.0	14.0
Medicine	28.0	32.0
Dentistry	43.0	48.0
Mining Engineering	17.0	15.0
Music & Performing Arts	42.0	35.0
Open Education	29.0	45.0
Pharmacy	66.0	70.0
Political Sciences	23.0	37.0
Sciences	37.0	43.0
Shipbuilding & Marine Sciences	9.0	19.0
State Conservatory	46.0	48.0
Technical Education	8.0	10.0
Theology	2.0	2.0
Trade & Tourism Education	32.0	33.0
Veterinary	19.0	21.0
Vocational Diffuse Education	19.0	21.0
Vocational Education	71.0	90.0

Source: See Table 6.1

6.4 Occupational Gender Segregation in Institutes of Higher Education Between 1988/89-1997/98

6.4.1 Estimation of Occupational Gender Segregation in Faculties of Institutes of Higher Education between 1988/89-1997/98

We will now apply the KI index to measure the changes in the pattern of vertical occupational gender segregation in academia, over the period 1988/89-1997/98, as this index satisfies appropriate criteria. Also by using the KI index, we can examine occupational segregation over time in detail through a decomposition of the change in the overall index.

Tables 6.5 presents the results for Turkish higher education institutes in aggregate, using the 40 faculties. In 1998 approximately 77 percent of total academic employment was represented by faculty's employment. Around 70 percent of academic women were employed in the faculties by 1998.

Although aggregate measures of segregation indicate a slight increase in the level of occupational segregation in academia, the decomposition of the change suggests that there has been a trend towards the integration of the genders in the occupations as measured by the composition effect (–4.91 %) for the period of 1988/89-1997/98. Approximately 5 percent less academics would have had to change appointment level to achieve zero segregation by 1998.

Table 6.5 KI Index Decomposition for Total Academic Employment of Faculties by Gender 1988/89-1997/98

	KI_1 (%)	KI_2 (%)	TCH (%)	COMP (%)	MIX (%)	OCC (%)	GEN (%)	INT (%)
1988/7 – 1997/8	0.098	0.100	1.83	-4.91	6.74	1.89	2.70	2.14

Source: See Table 6.1

The decomposition reveals that the increase in overall segregation was affected by changes in the structure of occupations and in the gender composition of the labour force, as shown by the mix effect for the whole period. The effect of changes in the sex composition of the labour force, which is the largest effect in the mix effect, operated to increase occupational segregation by gender over the period 1988/89-1997/98.

The gender effect reflected the growth of female employment over the period (see Table 6.3) which was accompanied by lower grow in male employment and therefore an increase in the female employment share.

Chapter 5 indicates that net employment growth and the rate of integration of the genders are positively correlated, because the presence of growing employment opportunities would create more jobs and job mobility. In contrast to the findings on occupational gender segregation for Turkey in Chapter 5, employment growth might encourage job mobility and opportunities, and assist the rate of integration of the sexes occurring during the whole period. Recently, because of the establishment of many new universities, which required new and more academic staff, academic employment has grown enormously in Turkey (see Table 6.3). In addition as we

mentioned earlier, according to the queueing process, the relative distributions of workers or jobs changes in response to the structural features of the labour market and job queues (Reskin and Roos, 1990). In our case, the demand for academic employees increased due to the growth of university sector, and at the same time the supply of men diminished because of lower salary, therefore all these factors contribute to decrease segregation in this sector.

In addition, the industrial and occupational structure is subject to long-term forces, which should be uncovered by the occupation component of the mix effect. In our case, however, the evidence is not clear, as the interaction effect is larger than the occupation effect during the whole period. However, the positive occupation effect does indicate growth in the more segregated areas of academic employment.

These results are consistent with our findings for occupational segregation for Turkey, with respect to professional employment, as reported in Chapter 5 in section 5.5.3.2 (see Table 5.7 and 5.8, and Appendix 2 for full results). For the whole period (1975-1990), the professional occupational groups, as compared to the other occupational groups, showed the only and fastest gender integration, with the exception of agricultural occupations. In professional jobs (and academia), women are able to compete more equally because entry into institutions of higher education depends on examinations scores, hence statistical discrimination by employers might not be as prevalent as in other occupational groups. Also, these women may be more aware of their rights and how to protect them.

6.4.2 Results for Individual Faculties of Academic Institutions

The estimation of the KI measure of occupational gender segregation for each faculty is based on the gender share of that faculty's academic employment. Table 6.6 presents the level of segregation in 1988/89 and 1997/98 for faculties, which are ranked from lowest to highest level of segregation according to the 1997/98 values. Although we report the results for all the computations for the 40 faculties of higher education institutes - $KI_{1988/9}$, $KI_{1997/8}$, total change, composition effect, mix effect, occupation, and gender effect and interaction effect (Table 6.8), caution must be expressed regarding the decomposition procedure. Because of the small numbers of staff in some faculties, the results of composition effects may not be reliable.

The segregation level for faculties in 1997/98 is ordered, from the Faculty of Vocational Diffuse Education with a low of 0.0038, to the Faculty of Political Sciences with a high of 0.14. The Faculties of Law, Economics, Management, and Political Sciences are among the most segregated faculties. As mentioned earlier, women's employment share of these faculties was not very high. This indicates that women are generally poorly represented in areas that would give access to that employment where the real source of power lies, and which involve decision-making in political institutions, public and business administration. On the other hand, the less segregated faculties are the education faculties where traditionally women have been employed and where wages are low.

The total change in the level of segregation for academic employment for the natural sciences, namely, the Faculty of Aeronautics and Space Sciences, Electrical &

Electronic Engineering, Science, Medicine etc. increased significantly (see Table 6.10). On the other hand the Faculty of Music and Performing Arts, Economics and Administrative Sciences, Trade & Tourism Education, Educational Sciences recorded increases in the level of segregation.

These results support the contention that women's choose of field moved from the 'unconventional' to the more conventional, 'feminine' fields.

6.4.3 The Contribution of Each Faculty to the Overall Level of Segregation in the University Sector (1988/89-1997/98)

In this section, we present the results calculated for each faculty using the modified KI (as is explained in Chapter 5, Section 5.4). Table 6.7 presents the faculties by level of the index values and employment shares in 1988/89 and 1997/98. The Table groups the faculties in ascending order for the index values in 1997/98. Once again, although the results for all the computations for the 40 faculties of higher education institutes - $KI_{1988/9}$, $KI_{1997/8}$, total change, composition effect, mix effect, occupation, and gender effect and interaction effect are reported (Table 6.9), caution must be expressed regarding the decomposition procedure, because the small numbers of staff in some faculties mean that the results of composition effects may not be reliable.

The Faculties of Vocational Education, Pharmacy and Theology make the largest contribution to the level of segregation in the academic sector, normalised by their corresponding employment shares, followed by Educational Sciences, Technical Education and Marine Sciences. These results are not surprising because women have their highest share both in Vocational Education and Pharmacy. However, they

have their lowest share in Theology (2 % in 1997/98). On the other hand the Faculties of Medicine, Music and Performing Arts, Languages and History and Education make relatively smaller contributions to the segregation index. This is, again, consistent with our claim that women have recently started to choose conventionally more "feminine" fields in the university sector.

6.5 Conclusion

This Chapter has investigated the pattern of change in occupational gender segregation within Turkish higher education institutions over the year of 1988/89 to1997/98, using the KI index. In addition each of the 40 faculties were examined to see whether there were differences in segregation levels and changes in the trend of occupational segregation over the whole period. Moreover the contribution of each faculty to the total level of segregation in the university sector was calculated.

The results reveal that there was a slight increase in the level of segregation of academic employment over the period 1988/89-1997/98. However, the decomposition of the KI index indicates that there has been a trend towards gender integration across academic levels (shown by composition effect over the whole period). Further, it indicates that changes in the structure of academic employment across the levels, and changes in the gender composition of the labour force as a whole contributed to boosting occupational segregation.

Turning to segregation for each faculty, in 1988/89 women were generally in the Faculties of Natural Sciences and Engineering (as explained in section 2) however, recently there has been a shift towards concentration in the social sciences which are

considered to be more 'suitable' for women. The composition effect shows that net segregation is increasing in the Faculties of Engineering and Sciences, Medicine, etc. where women are generally under-represented in the developed countries.

The results obtained for the contribution of each faculty to the overall level of segregation reveal that the faculties, which have highest and lowest shares of female academic women (such as the Vocational Education, Pharmacy and Theology), are the most segregated faculties. The Social Science Faculties, such as Music and Performing Arts, Education and Fine Arts, which are traditionally feminine fields, make relatively smaller contributions to the total level of segregation. This is not surprising, because, unlike in the past, Turkish academic women are recently choosing traditionally more 'feminine' fields.

Our findings in Chapter 4 shows that there is a significant occupational wage discrimination between genders i.e. women receive wage discounted relative to their productivity. The examination of employment discrimination between occupations in Chapter 5 reveals that women are relatively restricted in their access to various employments. Now we have also found that within a particular occupation –higher education institutions- females are relatively restricted in their access to the more senior positions in the employment hierarchy. This means that we have investigated an extensive range of labour market performance and found clear evidence of gender discrimination in each case such a finding of gender discrimination in all areas of labour market activity confirm the need for a systematic policy initiatives to improve female access to the Turkish labour market.

Appendix 1: The Tables

Table 6.6 Faculties by Level of Segregation, in 1988/89 and 1997/98

FACULTIES	$KI_{88/89}$	$KI_{97/98}$
Vocational Diffuse Education	0.0069	0.0038
Technical Education	0.0024	0.0051
Music and Performing Arts	0.0498	0.0104
Theology	0.0065	0.0131
Vocational Education	0.0227	0.0138
Medicine	0.0215	0.0368
State Conservatory	0.0555	0.0392
Economics and Administrative Sciences	0.103	0.0393
Veterinary Sciences	0.0991	0.0418
Higher Education Units without Students	0.0314	0.0431
Dentistry	0.0838	0.0447
Trade and Tourism Education	0.117	0.0452
Chemistry and Metallurgy	0.0737	0.0453
Communication	0.0676	0.0455
Electrical and Electronic Engineering	0.0160	0.0458
Engineering	0.0735	0.0470
Education	0.0270	0.0471
Aeronautics and Space Sciences	0.0144	0.0492
Mechanical Engineering	0.0208	0.0504
Arts and Sciences	0.0526	0.0517
Fine Arts	0.0664	0.0520
Engineering and Architecture	0.0641	0.0526
Agriculture	0.0870	0.0615
Forestry	0.0491	0.0626
Letters	0.0552	0.0639
Marine Sciences	0.0544	0.0694
Fish and Fisheries	0.0682	0.0717
Educational Sciences	0.173	0.0740
Languages, History and Geography	0.0349	0.0758
Architecture	0.118	0.0781
Law	0.132	0.0892
Economics	0.129	0.0970
Mining Engineering	0.0975	0.100
Sciences	0.0579	0.101
Civil Engineering	0.146	0.101
Shipbuilding and Marine Sciences	0.0659	0.110
Pharmacy	0.112	0.112
Management	0.152	0.124
Open Education	0.112	0.126
Political Sciences	0.164	0.148

Source: See Table 6.1

Table 6.7 Faculties by Level of Normalised Index Values and Employment Shares in 1988/89 and 1997/98

Faculties	$Share_{88/89}$	$Share_{97/98}$	$KI_{j88/89}$	$KI_{j97/98}$
Music and Performing Arts	0.007	0.002	0.112	0.036
Medicine	0.242	0.212	0.022	0.036
Trade and Tourism Education	0.002	0.001	0.125	0.037
Languages, History and Geography	0.010	0.007	0.073	0.045
Education	0.062	0.064	0.023	0.045
Art and Sciences	0.091	0.104	0.051	0.049
Economics and Administrative Scien	0.046	0.053	0.103	0.062
Fish and Fisheries	0.003	0.006	0.080	0.063
Engineering and Architecture	0.040	0.034	0.107	0.072
Chemistry and Metallurgy	0.003	0.004	0.071	0.082
Fine Arts	0.013	0.012	0.087	0.082
Law	0.012	0.012	0.130	0.083
Electrical and Electronic Engineering	0.005	0.005	0.100	0.090
Engineering	0.096	0.070	0.078	0.094
Economics	0.005	0.005	0.128	0.102
Agriculture	0.041	0.039	0.121	0.106
Veterinary Sciences	0.016	0.016	0.112	0.109
Vocational Diffuse Education	0.014	0.062	0.119	0.111
Civil Engineering	0.007	0.007	0.145	0.113
Shipbuilding and Marine Sciences	0.001	0.001	0.215	0.127
Management Sciences	0.006	0.005	0.140	0.137
Dentistry	0.025	0.022	0.072	0.139
State Conservatory	0.023	0.019	0.137	0.159
Forestry	0.019	0.011	0.159	0.161
Mining Engineering	0.005	0.005	0.221	0.163
Higher Education Units Without Studt	0.003	0.002	0.132	0.165
Letters	0.086	0.106	0.210	0.166
Political Sciences	0.020	0.017	0.143	0.170
Mechanical Engineering	0.004	0.003	0.181	0.172
Aeronautics and Space Sciences	0.005	0.005	0.246	0.181
Communication	0.001	0.001	0.180	0.183
Open Education	0.004	0.006	0.148	0.184
Marine Sciences	0.002	0.001	0.110	0.186
Architecture	0.0008	0.0004	0.066	0.186
Technical Education	0.018	0.013	0.179	0.199
Educational Sciences	0.010	0.013	0.222	0.221
Theology	0.002	0.001	0.239	0.231
Pharmacy	0.017	0.018	0.278	0.297
Vocational Education	0.016	0.012	0.351	0.379
	0.007	0.003	0.407	0.576

Source: See Table 6.1

Table 6.8 All Results for Index Computation of Faculty Academic Employment for the Period 1988/89 – 1997/98

Faculties	KI_1	KI_2	Mix	Occ	Gen	Int	Comp	Tch
Fac of Medicine	.021	.036	17.34	8.62	7.02	1.68	34.94	52.28
Fac of Dentistry	.083	.044	21.81	18.24	1.48	2.08	-82.5	-60.77
Fac of Pharmacy	.112	.112	2.85	10.84	-7.26	-.72	-3.22	-0.36
Fac of Letters	.055	.063	9.92	7.28	.98	1.65	4.62	14.54
Fac of Lang, Hist&Geog	.034	.075	3.29	-6.70	6.99	3.00	70.60	73.89
Fac of Sciences	.057	.101	13.51	8.18	4.89	.43	41.35	54.86
Fac of Arts&Sciences	.052	.051	7.83	5.73	1.44	.64	-9.55	-1.72
Fac of Education	.027	.047	37.83	33.74	2.74	1.34	16.48	54.31
Fac of educational Scien	.173	.074	10.20	8.86	-1.23	2.57	-90.31	-80.11
Fac of Vocational Educ	.022	.013	125.47	336.87	-82.93	-128.47	-173.82	-48.35
Fac of Technical Educ	.002	.005	24.15	7.54	16.16	.44	46.92	71.08
Fac of Fine Arts	.066	.052	25.48	20.18	2.08	3.21	-49.68	-24.20
Fac of Law	.132	.089	5.89	1.41	3.20	1.27	-44.61	-38.71
Fac of Theology	.006	.013	3.88	9.51	-12.08	6.45	63.28	67.17
Fac of Economics	.129	.097	9.08	3.17	4.98	.92	-37.39	-28.31
Fac of Eco&administ Sci	.103	.039	1.66	6.41	-2.28	-2.47	-91.73	-90.07
Fac of Management	.152	.124	17.68	-4.56	15.92	6.32	-38.01	-20.32
Fac of Political Sciences	.164	.148	20.52	-6.57	27.70	-.61	-30.42	-9.89
Fac of Ship &Mari Sci	.065	.110	63.07	6.99	61.71	-5.63	-12.76	50.30
Fac of Elect&Electro Eng	.016	.045	12.19	1.94	8.24	2.00	84.20	96.40
Fac of Chemi &Metallur	.073	.045	45.23	19.77	12.33	13.12	-92.89	-47.65
Fac of Civil Engineering	.146	.101	23.82	14.40	.63	8.79	-59.89	-36.06
Fac of Mining Eng	.097	.100	-.54	.15	-8.42	7.72	3.41	2.86
Fac of Mechanical Eng	.020	.050	59.21	4.35	69.08	-14.16	23.87	83.14
Fac of Architecture	.118	.078	26.58	19.86	.97	5.74	-67.38	-40.80
Fac of Engineering	.073	.047	21.64	17.23	-.14	4.56	-65.66	-44.01
Fac of Eng&Architecture	.064	.052	23.57	4.36	16.03	3.17	-43.31	-19.74
Fac of Forestry	.049	.062	33.82	-10.96	53.84	-9.05	-9.68	24.14
Fac of Veterinary	.099	.041	14.21	4.25	7.08	2.86	-95.54	-81.32
Fac of Agriculture	.087	.061	16.67	2.88	11.61	2.16	-50.98	-34.30
Fac of Open Education	.112	.126	16.44	-8.41	17.03	7.83	-4.31	12.13
Fac of Aerona&SpaceSci	.014	.049	18.27	12.02	8.12	-1.88	90.73,	109.01
Fac of Communication	.067	.045	32.85	26.96	1.82	4.06	-71.97	-39.12
Fac of Voc Diffuse Edu	.006	.003	95.85	90.47	7.08	-1.70	-154.55	-58.69
Fac of Fish&Fisheries	.068	.071	29.37	6.53	16.75	6.12	-24.44	4.92
Fac of Marine Sciences	.054	.069	-37.29	-5.48	-40.35	8.54	61.54	24.25
Fac of Trade&Tourism	.117	.045	0.16	.78	1.81	-2.43	-89.02	-88.85
State Conservatory	.055	.039	17.38	18.18	.349	-1.14	-51.83	-34.44
Higher Edu without Stdn	.031	.043	47.22	50.42	-.31	-2.88	-15.74	31.47
Fac of Music&Perfor Arts	.049	.010	-138.71	-135.3	-6.53	3.13	8.09	-130.61

Source: See Table 6.1

Table 6.9 All Results for Modified Index Computation of Faculty Academic Employment for the Period 1988/89 – 1997/98

Faculties	KI_1	KI_2	Mix	Occ	Gen	Int	Comp	Tch
Fac of Medicine	.022	.036	24.55	5.72	18.65	.17	24.92	49.48
Fac of Dentistry	.137	.159	28.10	-8.15	28.10	8.15	-13.73	14.36
Fac of Pharmacy	.351	.379	11.81	-5.13	11.81	5.13	-4.34	7.46
Fac of Letters	.143	.170	25.74	-3.88	26.31	3.31	-8.31	17.42
Fac of Lang, Hist&Geog	.073	.145	65.00	-1.49	69.37	-2.87	.64	65.65
Fac of Sciences	.072	.139	46.35	-2.05	40.26	8.14	16.21	62.57
Fac of Arts&Sciences	.051	.049	10.86	4.97	4.36	1.52	-15.69	-4.82
Fac of Education	.023	.045	67.67	27.45	27.27	12.94	-2.35	65.31
Fac of educational Scien	.239	.231	16.64	-10.06	18.37	8.33	-20.08	-3.43
Fac of Vocational Educ	.407	.576	37.55	-9.06	37.55	9.06	-3.23	34.32
Fac of Technical Educ	.222	.221	-7.84	.20	-7.84	-.20	7.16	-0.67
Fac of Fine Arts	.087	.082	29.88	-4.11	19.19	14.80	-35.12	-5.24
Fac of Law	.130	.083	6.01	.84	3.63	1.52	-49.89	-43.88
Fac of Theology	.278	.297	1.18	.40	1.18	-.40	5.51	6.70
Fac of Economics	.128	.102	12.33	5.13	8.73	-1.53	-35.47	-23.13
Fac of Eco&administ Sci	.103	.062	-3.41	4.05	3.63	-11.10	-46.53	-49.95
Fac of Management	.140	.137	40.75	-3.28	38.84	5.19	-42.58	-1.83
Fac of Political Sciences	.181	.172	25.70	-9.06	28.38	6.38	-30.37	-4.67
Fac of Ship &Mari Sci	.215	.127	-51.82	2.10	-50.30	-3.62	.81	-51.01
Fac of Elect&Electro Eng	.100	.090	-27.20	3.74	-27.20	-3.74	16.69	-10.50
Fac of Chemi &Metallur	.071	.082	69.76	2.35	60.53	6.87	-55.50	14.25
Fac of Civil Engineering	.145	.113	13.66	16.14	-.19	-2.28	-38.25	-24.5
Fac of Mining Eng	.132	.165	11.76	10.83	11.76	-10.83	10.65	22.41
Fac of Mechanical Eng	.246	.181	-37.50	3.08	-37.50	-3.08	7.42	-30.07
Fac of Architecture	.179	.199	31.96	-4.80	29.70	7.06	-21.29	10.66
Fac of Engineering	.078	.094	.568	15.98	.56	-15.98	18.43	19.00
Fac of Eng&Architecture	.107	.072	-51.87	2.96	-55.42	.58	13.45	-38.41
Fac of Forestry	.221	.163	-38.41	-8.13	-38.41	8.13	8.26	-30.14
Fac of Veterinary	.112	.109	-12.3	2.01	-16.86	2.47	9.34	-3.03
Fac of Agriculture	.121	.106	-23.30	4.28	-26.55	-1.03	10.03	-13.26
Fac of Open Education	.110	.186	60.95	1.89	62.24	-3.18	-9.30	51.64
Fac of Aerona&SpaceSci	.180	.183	-7.24	-.66	-7.24	.66	8.73	1.49
Fac of Communication	.148	.184	39.16	-6.54	36.50	9.20	-17.20	21.95
Fac of Voc Diffuse Edu	.119	.111	-13.88	.55	-16.14	1.70	7.47	-6.40
Fac of Fish&Fisheries	.080	.063	-16.10	7.93	-26.57	2.53	-7.74	-23.85
Fac of Marine Sciences	.066	.186	57.39	-5.56	59.50	3.44,	37.89	95.28
Fac of Trade&Tourism	.125	.037	.701	4.72	1.14	-5.16	-109.50	-108.8
State Conservatory	.159	.161	11.62	1.31	11.62	-1.31	-9.91	1.70
Higher Edu without Stdn	.210	.166	-12.95	-1.33	-16.50	4.88	-10.46	-23.42
Fac of Music&Perfor Arts	.112	.036	-99.40	-42.28	-90.63	33.51	-3.61	-103.01

Source: See Table 6.1

CHAPTER 7

CONCLUSION AND POLICY IMPLICATIONS

To conclude this thesis, firstly a general overview of each Chapter's findings will be presented, and the policy implications to eliminate gender discrimination in the Turkish labour market will be proposed. In addition, a proposal for further research in this subject will be made.

7.1 Summary and the Policy Implications of the Study

Although we have not been able to test the human capital model, which was outlined in Chapter 2, our statistical analysis of gender wage differences in Chapter 4 shows that even if male and female workers in the same branch of economic activity have the same level of education, and seniority, women earn less than men on average (see Table 4.4 and 4.5). According to the theories described in Chapter 2 of this study, discrimination against Turkish women in employment derives from a variety of sources. Firstly, employers are not able to obtain detailed information and statistics about the productivity of female applicants, therefore they make their hiring decisions on the basis of the alleged <u>average</u> performance of woman relative to man. Employers' belief that female workers in general are not as reliable as male workers, because of their domestic responsibilities, disadvantage particular women who are as committed to the labour force as men. This sort of employer discrimination is called statistical discrimination.

Another source responsible for gender discrimination is traditional attitudes and beliefs in society about women workers, which is reflected in protective and discriminatory legislation, such as that the husband is the 'head of the household' and that the wife's place of residence must be at her husband's place of residence. The existing protective legislation in the Turkish Labour Law, that forbids women from working in unsuitable jobs, also contributes to occupational and industrial segregation. As cultural, social and ideological factors play a very important role in producing the subordinate position of women in the Turkish labour market, we can say that the feminist theories of discrimination may be useful in explaining gender discrimination in Turkey. In addition, the case study of gender segregation within the Turkish Higher Education Institutions in Chapter 6 conforms to the queuing theory, as suggested by Reskin and Roos (1990). According to this theory, the preferences of employers and male workers decide how the gender composition of an occupation is changed. In our case, when the earnings of the university sector declined, men preferred to find better opportunities elsewhere and then women had opportunities to enter this sector.

Turkish women have lower levels of education, labour force participation and wage rates, than men. The female participation rate is quite low compared to their male counterparts (nearly 30 per cent in 1994). This is consistent with the widely known U-shaped relationship between economic development and female participation rates, which has been observed in the OECD countries. The U-shaped trend happened in different time periods in different countries depending on the country's social and economical backgrounds. Although it is expected to emerge in this decade in the

Turkish case, it needs to be accompanied by policies and implications to encourage female labour participation.

Moreover, it has been observed that the participation rates for women and men in rural areas are higher than in urban areas in spite of the urban migration since 1950s. Although 60 per cent of Turkey's population lives in urban areas, only about 23 per cent of the female labour force is to be found in these urban areas (SIS, 1994). This may be due to more limited job opportunities for women in urban areas and the social and traditional constrains on their employment, in contrast to the rural areas where women work as unpaid family workers in agriculture (see Chapter 3). Analysis of data by sector and employment status showed that women were predominantly employed in agriculture and underrepresented in industry and services (about 74 per cent in agriculture, 7 per cent in industry and 12 per cent services in 1990). Men were more evenly allocated across sectors (34 per cent in agriculture, 24 per cent in industry and 38 per cent in services in 1990) (SIS, 1992). There were big discrepancies in employment status by gender as well, for instance, around 62 per cent of women work as unpaid family workers compared to 12 per cent of men.

There are also huge differences in the literacy rate and educational attainment between men and women in Turkey. Econometric studies of female labour supply, in both developed and developing countries, shows that schooling plays a very important role in determining female participation in the labour market. Analysis of Turkish data on labour force participation by educational status and gender shows that the positive relationship between education and labour force participation is more apparent among urban women than rural women. In urban areas, industrial and

service sectors, that require more education than agriculture, are prevalent. However, as is demonstrated in Table 12a (appendix, Chapter, 3) at every level of education, women tend to have lower participation rates than men. When it is accepted that men are the breadwinners and women are the homemakers in the society, gender discrimination in hiring, even at the same level of education, is inevitable.

The empirical study of wage discrimination between male and female workers for different occupations in the following branches of economic activity; manufacturing, mining, and quarrying, electricity, gas and water sectors investigated in Chapter 4, shows that there is a significant wage discrimination between men and women. Our econometric results show that approximately 20 per cent of the differences in wages between men and women are explained by gender discrimination. The remaining 80 per cent could be explained by factors such as years of schooling, experience and occupational gender segregation. In addition the test of wage discrimination in 38 occupations such as, accountant, cook, or cleaning works, etc. in manufacturing sector for the year of 1994, indicates that there are very significant wage differentials between man and women. These results support the idea of gender segregation as the most powerful explanatory factor accounting for the wage differences between men and women in the Turkish labour market. Gender discrimination in Turkey is consistent with the crowding hypothesis, which was proposed by Fawcett in 1918 (Tzannatos, 1989). According to this theory, the employers' prejudices, the government's protective legislations, and social and traditional thoughts and assumptions play a significant role in crowding women into low paying occupations in Turkey.

Likewise, in Chapters 5 and 6 of this thesis, we examined the presence and extent of occupational segregation by gender in Turkish labour market. The results reveal that there was increasing occupational segregation in the Turkish labour market for the period of 1975-1990. The result of the modified KI index of Chapter 5 showed that the Production, the Sales and Services groups of occupations are the most segregated, followed by the Administrative, Agriculture, and Professional occupational groups. The highest segregation level in the Production sector can be explained by factors such as social, tradition and productive legislation. The employers' discriminatory behaviour in hiring process, due to the belief that women are not suitable for heavy or mechanical jobs, also caused segregation in these occupational groups. In addition, the Sales, Services and the Clerical groups make the second largest contribution to the overall segregation index; despite being amongst the growing sectors of employment in Turkey recently, they did not help to reduce occupational gender segregation. Because women's education level and labour force qualifications were confined by tradition, culture and family, they became disadvantaged in competition with men for these jobs. Also men were more mobile to take up new jobs in different regions: in contrast to women, who were dependent on their husbands.

Net segregation, measured by the Composition effect, reveals that the Professional, and the agricultural occupations have had the fastest rate of integration during the whole period (1975-1990). The better integration in the Agricultural occupations could have resulted from the general decrease in the employment share of this sector. Additionally, the changing employment structure from agriculture to industry and services in the Turkish economy affected the segregation in Agriculture. The decline

of segregation in the Professional occupational group may have resulted from several factors. For instance, entry into higher education depends on examination scores in Turkey, therefore statistical discrimination by employers may not be as common as in other occupations, which do not demand higher education qualification. Furthermore, the educated and qualified women are more likely to be aware of legislative changes in favour of them and they can be more active in pursuit of their legislative rights. This result is consistent with our findings in Chapter 6, which analysed the pattern of change in vertical occupational segregation by gender within the Turkish higher education institutions. According to the KI index, there was a slight increase in the level of segregation in academic employment, but the decomposition of the KI index suggests that there has been a trend towards gender integration across academic levels over the period 1988/89 to 1997/98. In addition, the decline in segregation in the academic sector may be derived from the increasing demand for academic employees due to the growth of the university sector. Also the supply of men decreased because of lower salaries after 1980s. As is explained in Chapter 6, this result also supports the theory of queuing process, which was developed by Reskin and Roos (1990). According to this theory, the relative distributions of workers or jobs changes in response to the structural features of the labour market and job queues.

In sum, the results of the empirical Chapters show that there is wage discrimination between men and women in the Turkish labour market and the most important explanation accounting for this wage gap is the occupational gender segregation. The findings of this study propose that wage discrimination and occupational gender segregation in the Turkish labour market arise from the constrained labour market choices for women. Institutional barriers to their education, employment and training

are responsible, rather than women's free choices in the market, as suggested by the human capital theory. Cultural and traditional stereotypes among employers and in the society as a whole about the appropriate gender characteristics for certain jobs play a very important role in the persistence of discrimination in the Turkish labour market. Therefore all these findings propose that the intervention to eliminate discrimination in Turkey is inevitable.

As gender discrimination in the Turkish labour market arises from lots of different sources it is necessary to address a variety of policies to remove it. We believe that in the Turkish case, educational policies could have pervasive effects greater than any other policies such as anti-discrimination legislation and affirmative action or equal employment opportunity strategies, to eliminate gender discrimination. The impact of education is quite substantial to improve women's situation in both market and non-market areas. Because it will not only increase women's labour force participation rates and their more equal access to male-dominated occupations, but also help to reduce the discrimination against women, by changing the discriminatory social norms in the society. Thus, the government should devise policies to encourage girls' attendance at school, especially in rural areas where educational attainments are very low. Although the duration of compulsory primary education was extended to eight years in 1989, the government has only taken a step forward to implement it recently (the late 1998). The government's main policy is to raise the general educational endowment (and particularly women's educational endowment) should include the firm enforcement of an eight-year compulsory education programme.

Additionally, the vocational and technical schools, which confine women's labour force opportunities and create occupational segregation, need to be modified to eliminate the designation of separate girls and boys vocational schools. The World Bank (1993) suggests that the government needs to set up programmes, which have successfully worked in Morocco, to attract girls to non-traditional vocational programs, to eliminate gender inequality in the education system.

As is mentioned above, female labour participation rate is very low in Turkey, therefore policies to help adapt females to the labour market are strongly needed – for instance reducing and equalizing the burden of household responsibilities and child care activities. The conventional belief that women are generally responsible from housekeeping and rearing children hinders women's labour market activities. In spite of the fact that changing social conventions about the roles of men and women is not very easy, the World Bank (1993) report on Turkey proposes that "policy responses in the form of "moral suasion" are possible. For example, through promotional and publicity campaigns (e.g. TV programmes, documentaries and media advertising by government) showing men helping in household chores, women working in "male-dominated" occupations and publicizing the dilemmas that working women face in juggling their time" (World Bank, 1993, p.46). These types of policies can have a great impact on the young generation, as well as on society as a whole. In addition, the government needs to apply some policy measures to encourage the sharing of domestic chore responsibilities between men and women. For example, as Riach (1975) recommends in his Australian study, introducing compulsory domestic science and child care courses into the curriculum of all schools for both genders at the appropriate age levels assist and encourage males to learn and accept their

responsibility of domestics duties. Further, Riach (1975) advises that "to aid in the development of symmetrical work roles between the sexes, the taxation and social security system should be restructured so that the same benefits, credits, deductions, etc., are available to any individual, regardless of sex, who opts for a full-time 'non-market' function" (Riach, 1975, p.79). For instance, in Sweden, such programs as social insurance payments to either fathers or mothers who draw out from the labour force after childbirth and the right of 15 days absentee leave per year to look after sick children for all employees whether male or female in Swedish civil service, had enormous impact on growth of female labour force in the sixties (Madden, 1973). We assume that the Turkish government should benefit from this Swedish experience to help the integration of women into labour market.

Although the Turkish legal system is gender-neutral, there are some regulations, which encourage and support discrimination and occupational segregation in labour market. There are some existing articles in the labour market, which cause and support discrimination against women. For example, Article 13 of the Labour Law gives permission to employers to dismiss a woman worker on basis of her pregnancy. Also the existing protective labour legislation, which confines women into traditional and low paying female occupations, contributes to occupational and industrial segregation in the labour market. It has been observed in several countries that the abolition of such discriminatory legislation can play a very important role in changing the attitudes of men and women towards the suitability of jobs for each gender and also affects girls educational choices for their future careers (World Bank, 1993). Therefore the repeal of discriminatory legislation from the Turkish legal system should be a necessary policy to help to remove occupational segregation and

discrimination in labour market. Additionally, as suggested by the World Bank report (1993) in a Turkish country study, the government needs to set up legal advice agency or counselling facilities to assist people (whether men or women) to understand and pursue their rights under the Law.

The policies presented above are very important for Turkey, because they will help to reform traditional sex-role stereotyping and attitudes about the status of women in the society. However, if these policies are to be successful in eliminating gender discrimination in the society and especially in the labour market, they must be accompanied by other labour market-related policy initiatives. For example, facilitating child care policies – providing comprehensive system of public and/or private day-care centers, which take the form of tax-breaks, assist the adaptation of women into the labour market and it can improve their employment opportunities as well. The day-care policy, which makes the proportion of child care expenses of working mothers tax deductible, has been successfully applied in France in the early eighties and helped women to compete more equally in the labour market (Dex and Walters, 1989). Such policy can also be applied in Turkey.

The World Bank report (1993) in the Turkish study suggests that the government needs to encourage or mandate employers to supply more flexible time arrangements, by changing labour regulations to allow part-time and flexitime employment, to increase women's participation in the labour market. However, it is important to note that, although part-time work provides an option for women who do not want to work full-time due to the family responsibilities, it also limits their available labour market opportunities and hampers them in terms of lower occupational status and low paying

jobs. It has been shown by (Kramar, 1987; Dex and Walters, 1989; Watts, 1991; Watts and Rich, 1992) that women's disproportionate representation in part-time employment is responsible for the occupational segregation and part-time employment has also been barrier to women's full integration into the labour market.

The main result of our analysis indicates that occupational gender segregation is very substantial and accounts for an important portion of the overall wage gap in the Turkish labour market. Women work disproportionally in traditional female jobs, especially agricultural activities. Therefore additional policies and programmes to eliminate occupational segregation and open access to non-traditional occupations by providing new opportunities for women to enter non-agricultural activities are required. The government itself should provide an example to eliminate gender segregation in the workplace by hiring women in modern, non-traditional public sector jobs. In this case, the Egyptian government employment policies provide an example to improve women's labour market situation. The World Bank (1995) points out that "although the Egyptian policy of guaranteeing employment for graduates has led to an unsustainable growth in government employment and overstaffing, it may have had a positive impact on the role of women in the labour market" (World Bank, 1995, p. 74).

Although there is no special anti-discrimination legislation in Turkey, the 1982 Constitution specifies gender equality before the law and forbids discrimination on the basis of gender. In the case of applications for public service, no discrimination can be made other than the qualifications necessary for the type of work to be performed. If discrimination based on gender occurs, an applicant may apply to the

courts for the annulment of the administrative act and can claim unconstitutionality of such discrimination. However, in practice, few claims are filed (World Bank, 1993). Women who have incurred discrimination and been excluded from certain jobs are in no position to file a complaint. They may not know that they have been discriminated against. Also the high cost of litigation means that anti-discrimination legislation cannot work effectively in countries like Turkey. In this case, an affirmative action programme, which aims to increase the proportion of women in certain occupations, is necessary. The affirmative action policy has been used in developed countries such as the US, Australia and Canada, with some positive effects, however its impact on generating equality between men and women is still disputed. There are some disadvantages of the affirmative action policies, such as being too costly and difficult to enforce in the private sector. Also it is argued that it creates a reaction against women (minority) and aversion between social groups. On the other hand, it is claimed that this policy is a very useful for persuading government and its private contractors to employ more women workers in certain jobs and open access for them to enter occupations which are male dominated (World Bank, 1995). Moreover, some studies show that affirmative action policies have generally had more impact on occupational upgrading of women in professional and administrative jobs where skills are required outside the labour market and the career paths are well defined (Watts and Rich, 1992; Rich, 1999). In sum, we can suggest that the policies, which can raise the awareness of employers and the society as a whole in respect of hiring, training and promoting women in all kind of jobs can be more effective than the affirmative action policies in Turkey.

Moreover, as was pointed out in Chapter 3, a majority of working women was not covered by social security system (85 % in 1994). On the other hand about 84 % of men benefit from social security. Therefore, additional policy initiatives should be aimed at increasing and equalizing the proportion of women covered by social security. The existing three schemes of social security system (the Self-employed and Housewives Social Security Institution, the Republic of Turkey Retirement Fund, and the Social Security Institution) should be combined and reformed to provide social insurance for all women and men, especially women who works an unpaid family workers.

Policies to eliminate wage discrimination and occupational segregation need accurate data on the scope, causes and consequences of this phenomenon. Therefore, the collection and publication of data regarding the socio-economic status of the women vis a vis men is another vital area for policy initiatives. Establishing a comprehensive and up-to-date data bases on gender-disaggregated earnings and income, productivity-related characteristics such as - education, schooling, and family characteristics such as - marital status, number of children, is very important for analysing, assessing, and improving women's economic and social conditions, and for monitoring the effect of policy initiatives. In addition, as was pointed out several times, the majority of working women in Turkey who dwell on rural areas are engaged in agricultural activities and most of them are not even recorded in the statistics. Therefore accurate data collection on these women's socio-economic characteristics is needed to enable policy implications to improve their conditions and increase their visibility in the Turkish economy.

In Turkey, recently the gender-related issues have been introduced, such as the establishment of the new General Directorate on the Status and Problems of Women's (DGSPW), 1990, and the creation of a new, separate Ministry of State for Women in 1991 to improve women's status and promote their full integration into the economy. These institutions should be encouraged, by sufficient resources, enough staff commitment and authority, to be effective and fulfil their aim. They should research and pinpoint the causes and consequences of discrimination against women and devise policies to end discrimination.

Consequently, we highly recommend that the policies of elimination of discrimination and the integration of women into labour market need to be directed towards both the enforcement and appraisal of existing legislation, and the education of the whole population to breakdown prejudice and stereotypical attitudes to women in the society and especially in the labour market. The objective is to provide full equality between the genders via the contribution of both formal and informal channels – government organizations, the media, non-governmental organizations and political party platforms and directorate actions. If these policies are strenuously applied in Turkey, the discrimination and occupational segregation by gender can be diminished and perhaps eliminated.

7.2 Assessment of the Study and Suggestions for the Future Research

This study may claim originality on the ground that it has presented, for the first time in the Turkish labour market, an analysis of wage discrimination between male and female workers. This has been done for both different occupations within

manufacturing sector and for different occupations in the branches of economic activities using cross-section data in the context of an econometric model. Another major aspect of this study is that it has investigated the pattern of horizontal occupational segregation by gender in Turkey through the decomposition of the new Karmel and Maclachlan index (KI) in general and the vertical occupational segregation in the Turkish higher education institutions in particular. All these empirical studies fill a large gap in this research area in Turkey. Therefore there can be no doubt that this study may benefit future research. There is one major drawback of this research which is that the scope of our empirical work has been limited due to the limited available and compatible data set with in certain periods. For instance, although some policies have been introduced recently, such as the establishment of the DGSPW and the creation of a separate Ministry of State for Women, we could not measure the effect of these latest developments and their implementation in Turkey, because of the lack of data relating to the latest years. Hence an important area of future research is to investigate occupational segregation by gender both in the Turkish labour market and within the higher education institutions with suitable data to assess the effectiveness of these policies. Then to make the essential strategic targets and relevant recommendations to end discrimination against women.

Likewise, due to the lack of available data we could not apply the Oaxaca's decomposition technique, which is the accepted conventional method in the literature. We had to apply the alternative specifications on the earnings function, in the context of a different econometric model, with the most suitable available data. Thus, another important future extension of this research may be to apply the decomposition technique to test wage discrimination by gender when suitable data are available.

A further far-reaching extension of the study could be the measuring of horizontal occupational gender segregation in the workplace by utilizing the establishment-level data. In this study, we examined horizontal occupational gender segregation in the Turkish labour market by using the census data, due to the lack of data at the level of the establishment/organization. In fact, establishment-level data can provide more information on employers' policies, which cause discrimination, therefore, these kinds of data can yield further information to understand the causes and consequences of occupational segregation. Subsequently more appropriate policy implications could be introduced to achieve better results for fighting discrimination.

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